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August 15, 2000

**By Hand Delivery**

Mr. Joseph McDowell  
U.S. Environmental Protection Agency (3HS21)  
1650 Arch Street  
Philadelphia, Pennsylvania 19103

Re: Crater Resources Superfund Site

Dear Mr. McDowell:

Enclosed please find comments on behalf of Beazer East, Inc., Keystone Coke Company and Vesper Corporation with respect to portions of the Proposed Remedial Action Plan for the Crater Resources Superfund Site.

Very truly yours,



Samantha R. Corson

SRC:krm  
Enclosure

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14 August 2000  
Reference: H4904.00.01

Mr. Joseph McDowell  
U.S. Environmental Protection Agency (3HS21)  
1650 Arch Street  
Philadelphia, Pennsylvania 19103

Re: *In the Matter of: Crater Resources, Inc. Site,  
Upper Merion Township, Montgomery County, Pennsylvania,  
Dkt. No. III-94-42-DC  
Former Waste Ammonia Liquor (WAL) Pipeline  
Investigations, Excavation Activities and Findings -  
Flint Hill Road and Keystone Parcel*

Dear Mr. McDowell:

Please accept the following as comments on behalf of Beazer East, Inc. (Beazer), Keystone Coke Company (Keystone) and Vesper Corporation (Vesper) with respect to portions of the Proposed Remedial Action Plan (PRAP) for the Crater Resources, Inc. NPL Site (Site) dealing with the route of the former WAL pipeline running from the former Rainey Wood/ Alan Wood/ Keystone Coke Company coke plant at River Road to the quarries comprising the Site.

The PRAP designates the entire pipeline route running southwest from the coke plant to Quarry 3 and between Quarries 1, 2 and 3 as an area to be investigated further and, as necessary, remediated. The PRAP also acknowledges that many portions of the pipeline route have already been investigated and fully remediated but indicates that areas may remain which have not been investigated or remediated.

As you know, the Crater PRPs stated their legal position before the PRAP was issued that pipeline portions beyond Renaissance Boulevard should not be part of the Site. The Crater PRPs have also previously submitted technical information to EPA which discuss virtually all portions of the pipeline route. By this letter, we are asking EPA to review the technical merits of two reports, namely:

AR306204B

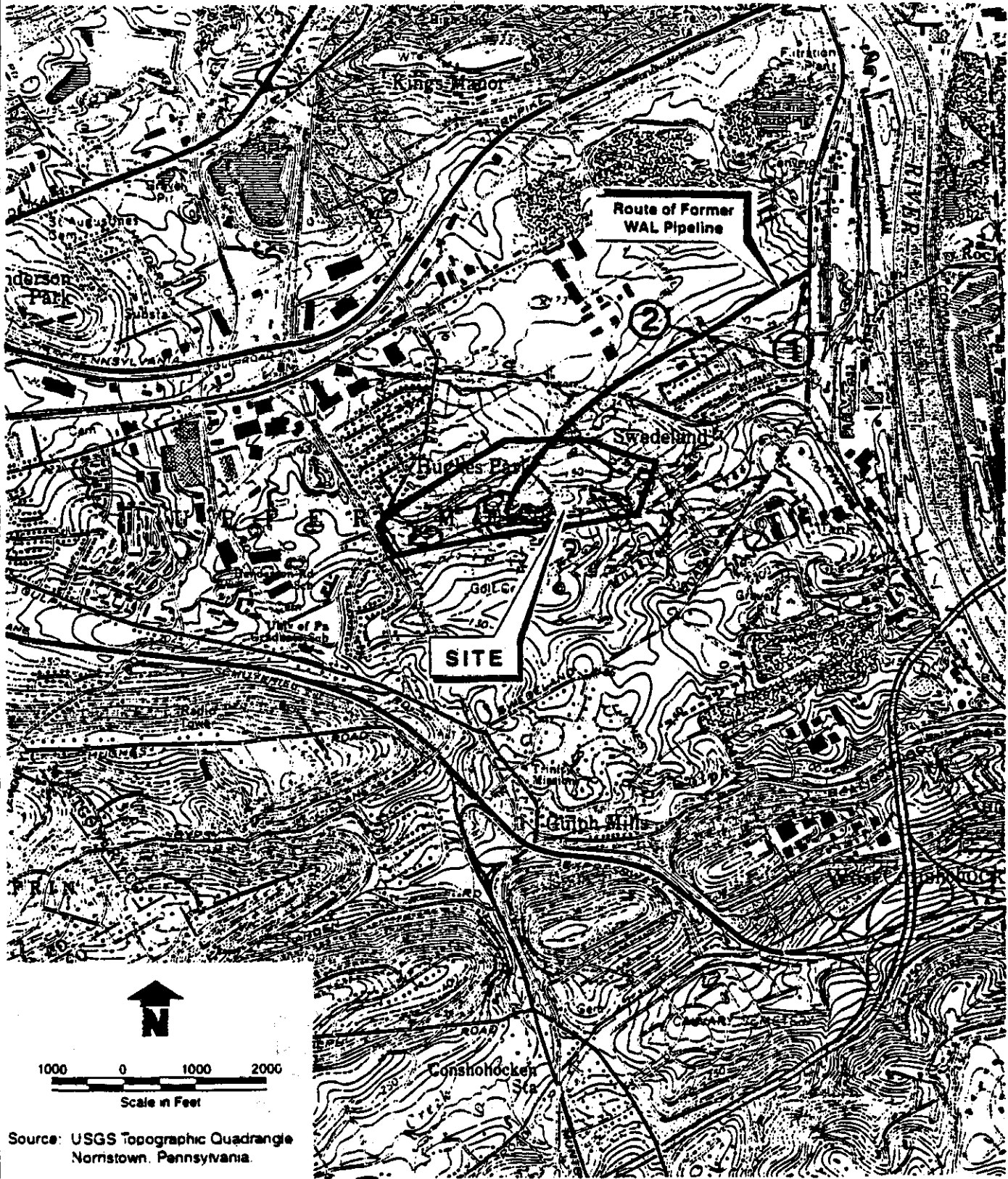


- The PADEP-approved Act 2 *Final Report* for the former WAL pipeline route on the Keystone Parcel between River Road and Flint Hill Road; and
- The Flint Hill Road excavation completed by ERM, provided to EPA in Appendix J of the RI for the Site.

Beazer, Keystone and Vesper have remediated the portion of the route between the right of ways of River Road and Flint Hill Road under the Pennsylvania Department of Environmental Protection (PADEP) Act 2 Program, submitted the results of the investigation and cleanup to PADEP and EPA before the PRAP issuance and obtained a PADEP approval for that cleanup. Nevertheless, this area has been designated as an area where investigation and remediation may be required. As a result, the affected property owners, potentially responsible parties, the host municipality, and the public at large may be unable to tell what EPA means in the PRAP and what should be done. As the PRAP is currently written, there is uncertainty about EPA's view of this work, and this uncertainty has already manifested itself in public discomfort resulting in opposition to attempts by O'Neill Property to obtain land use approvals for land lying over a portion of the route lying between Quarries 1 and 2. The PRPs believe the Keystone and Flint Hill Road portions of the pipeline route have been satisfactorily remediated, and that it is not consistent with good policy, the NPL or the requirements of public notice and comment required under CERCLA to burden properties lying along the entire pipeline route as part of a site to be remediated under a ROD when they have been remediated and shown safe.

We are asking EPA to clarify this issue before a ROD is issued so that the type of public comment and confusion which occurred in connection with the O'Neill land development proposal does not happen for the referenced pipeline portions. In an effort to assist EPA's evaluation of the Crater Resources, Inc. Site final remedy, Environmental Resources Management, Inc. (ERM) has prepared this summary for the former WAL pipeline route on the Keystone Parcel and Flint Hill Road. Although all of this background information should be in EPA's files, this letter also presents a summary of the data that has been gathered regarding the investigation, removal and remediation of the former WAL pipeline route. The locations of the former WAL pipeline investigation and excavation activities described herein are shown on Figure 1.

## Upper Merion Township, Pennsylvania



*Segment 1 -- Keystone Parcel Between River Road and Flint Hill Road*

In December 1999, ERM excavated the entire length of the suspected former WAL pipeline route (2,150 ft) on the Keystone Parcel to the right-of-ways for River Road and Flint Hill Road. This work was done under PADEP's Act 2 Program. A four-inch buried pipeline was found in places along the route, lying directly beneath the route of the former above ground pipeline, which had been removed previously. Where it was found, the buried pipeline was approximately one to two feet below the ground surface. All remaining pipeline and adjacent soils were transported off-Site for proper disposal. No visually stained soils were observed during the excavation.

Sixteen confirmatory soil samples collected from the floor of the excavation and six surface soil samples taken from the surface of the backfilled excavation were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), Target Analyte List (TAL) metals and EPA Contract Laboratory Program (CLP) cyanide. The analytical data were compared to the appropriate Act 2 Statewide Health Standard Medium-Specific Concentrations (MSCs) for non-residential direct contact with soils and protection of soil-to-ground water for non-residential soils. No exceedences of the Statewide Health Standard MSCs for Non-Residential Soils were detected. An Act 2 Release of Environmental Liability for the excavation work on the Keystone Parcel was received in July 2000. Several additional background samples were taken and the analytic results of these and the Act 2 results were evaluated under the criteria employed in EPA's risk assessment for the Site, demonstrating that the levels found at the pipeline did not pose an unacceptable risk. These results and memoranda were submitted to EPA. The PADEP-approved Act 2 *Final Report*, the PADEP approval letter and the memorandum providing the Act 2 *Final Report* to EPA are provided as Attachment 1.

*Segment 2 -- Flint Hill Road*

In May 1997, ERM removed a section of the former WAL pipeline approximately 40 ft in length beneath Flint Hill Road after discovery of the pipeline by Upper Merion Township Workers and EPA. Small areas of visually impacted soils were noted within one or two feet of the pipeline. The pipe and associated visually impacted soils were removed and transported off-site for proper disposal.

AR306207

Eleven post-excavation soil samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals and CLP cyanide. All detected concentrations were below the PADEP Act 2 Statewide Health Standard MSCs. A Summary of Flint Hill Road Soil Remediation Activities is provided as Attachment 2.

*Summary*

The various investigations/remediations of the former WAL pipeline route from River Road to Flint Hill Road show the following:

- The former WAL pipeline has been investigated and all remaining pipeline segments noted herein were removed between the right-of-way at River Road and Flint Hill Road.
- Little or no impacts to soil were observed along the former WAL pipeline.
- Where present before removal, the pipeline was consistently found at a depth of 2-3 feet below grade surface and 5 feet or more below grade surface at road crossings.
- Small segments (5-10 feet in length) of pipe may remain (e.g., between the Flint Hill Road right-of-way and the road shoulder). These segments should not pose a risk to human health or the environment, but they could readily be investigated by magnetometer survey and removed where identified.

In light of the foregoing, the PRPs ask that EPA seek to avoid burdening the Keystone Parcel as part of the Superfund Site. If you have any questions relating to this letter, feel free to contact me at (609) 895-0050.

Sincerely,



Richard J. Dulcey, P.E., CHMM  
Principal

RJD/rls  
attachments: 2

AR306208

Mr. Joseph McDowell  
H4904.00.01  
14 August 2000  
Page 5

Environmental  
Resources  
Management

cc: R. McKinstry - Ballard, Spahr, Andrews & Ingersoll  
D. Schleicher - Klehr, Harrison, Harvey, Branzburg & Ellers  
B. Giarla - Beazer East, Inc.  
J. McGovern - Obermayer, Rebmann, Maxwell & Hippel  
R. Baker - ERM  
R. Shuler - ERM

AR306209

*Attachments*

***Attachments***

AR306210

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Keystone Coke Company  
Vesper Corporation  
Beazer East Incorporated

Act 2 Statewide Health  
Standard Final Report  
*Keystone Coke Company  
Suspected Former Pipeline  
Corridor,  
Upper Merion Township,  
Montgomery County,  
Pennsylvania*

27 April 2000

Environmental Resources Management, Inc.  
Princeton Crossroads Corporate Center  
250 Phillips Boulevard, Suite 280  
Ewing, New Jersey 08618  
ERM Reference Number H4904.00.01

AR306213

## EXECUTIVE SUMMARY

The Keystone Coke Company Suspected<sup>\*</sup> Former Pipeline Corridor Site is located in Upper Merion Township, approximately one mile northwest of Conshohocken. For the purposes of this *Act 2 Statewide Standard Final Report*, the "Site" is defined as the one-half acre tract of land immediately beneath which the underground waste ammonia liquor (WAL) pipeline was located prior to its excavation in December 1999. The Site is located on a larger, vacant, 63-acre parcel of land owner by Keystone Coke Company located between the right of ways of Flint Hill Road and River Road (Route 23).

Alan Wood Steel Co. and its predecessor, Rainey-Wood Coke Co., operated a coke and coke byproduct manufacturing facility in nearby Swedeland, Pennsylvania from 1919 until 1977. After Alan Wood declared bankruptcy in 1977, the manufacturing facility and adjacent vacant property were sold to Keystone Coke Company. The adjacent vacant property is and was traversed by the Site, which, in 1977, contained an above-grade WAL pipeline. Keystone Coke Company operated the manufacturing facility from 1978 until its closure in 1981. At various times between closure and 1991, Keystone Coke Company dismantled all remaining structures associated with the coke plant and removed all above ground portions of the WAL pipeline.

In 1998, a buried section of the WAL pipeline running beneath Flint Hill Road was discovered and removed. This is believed to have been a portion of the above grade WAL pipeline, which ran underground to cross the road at this point. However, shortly after the Flint Hill Road segment was removed, Liberty Property Trust discovered sections of underground pipeline on property owned by Liberty during construction activities. This underground pipe was located along the route of another section of the above grade WAL pipeline, which had been removed by Liberty's predecessor in title. Because of the discovery of buried pipeline sections on Liberty's property, Keystone Coke Company, Vesper Corporation and Beazer East, Inc. suspected that an underground pipeline may have run beneath the route of the WAL above-grade pipeline on Keystone's property.

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<sup>\*</sup> The term "suspected" is used because at the time the NIR was submitted, the existence of an underground pipeline was suspected. Excavation activities confirmed the presence of the former underground pipeline.

In December 1999, Keystone Coke Company (Keystone), Beazer East Incorporated (Beazer) and Vesper Corporation (Vesper) retained Environmental Resources Management, Inc. (ERM) to undertake the following activities pertaining to the suspected underground WAL pipeline on the Site:

- Conduct a magnetometer survey to determine the presence or absence of the buried WAL pipeline;
- Remove any existing pipeline and adjacent suspect soils for proper off-Site disposal; and
- Complete post-excavation confirmatory sampling and analyses.

As a conservative measure, the excavation was planned to remove all soils immediately adjacent to the pipeline as well as soils showing visual or olfactory evidence of impact from pipeline contents. However, no evidence of leakage or stained soils or odors were observed at any location along the former pipeline route. Where no pipe, stained soils or odors were present, the soils were replaced into the excavation. All excavated pipeline remnants and associated soils were stockpiled and subsequently transported off-Site for proper disposal.

One post-excavation confirmatory sample (collected 0-6 inches below the floor of the excavation) was taken in the floor of the excavation (3.5 ft below original grade) every 150 feet (measured from the right of way of River Road) along the length of the suspected pipeline corridor on the Site, including locations where no pipe was found. Once the confirmatory samples were collected, the excavation was backfilled with the Site soils remaining along the perimeter of the excavation to restore the Site to its original grade. Surficial soil samples (6-12 inches below grade) were collected at 300 ft intervals along the former pipeline route to confirm that the newly-placed surficial soils met Act 2 Statewide Health Standards for Non-Residential areas.

The analytical data were compared to the appropriate Statewide Health Standard MSCs for non-residential direct contact with soils and soil-to-ground water for non-residential soils. No exceedences of the Statewide Health Standard MSCs for Non-Residential Soils were detected in either the post-excavation confirmatory samples taken in the floor of the excavation or in the surficial soil used as fill. Therefore, the soils remaining on-Site meet the Statewide Health Standards for Non-Residential Soils.

Due to the small size of the Site (i.e., less than one-half acre), no substantial ecological impact exists at the Site and no further ecological evaluation is required under Act 2.

Keystone Coke Company, Beazer East Incorporated and Vesper Corporation request cleanup liability protection, as is provided in Chapter 5, Section 501, of the Land Recycling and Environmental Remediation Standards Act, for all regulated substances analyzed for in soil on the Site, including the following regulated substances detected in soil for which attainment of the Statewide Health Standards for soils has been demonstrated using the Non-Residential Medium-Specific Concentrations:

<u>Inorganics</u>	<u>Volatile Organics</u>	<u>Semivolatile Organics</u>	
Aluminum	Acetone	Acenaphthene	Fluorene
Antimony	Benzene	Acenaphthylene	Indeno(1,2,3-cd)pyrene
Arsenic	2-Butanone	Acetophenone	2-Methylnaphthylene
Barium	Carbon Disulfide	Anthracene	Naphthalene
Beryllium	Dichloromethane	Benzo(a)anthracene	2-Nitrophenol
Cadmium	Ethylbenzene	Benzo(a)pyrene	Phenanthrene
Chromium	Toluene	Benzo(b)fluoranthene	Phenol
Cobalt	1,1,2-Trichloroethane	Benzo(ghi)perylene	Pyrene
Copper	Xylenes (total)	Benzo(k)fluoranthene	
Cyanide		Butylbenzylphthalate	
Iron		Carbazole	
Lead		4-Chloro-3-methylphenol	
Manganese		Chrysene	
Mercury		o-Cresol (2-Methylphenol)	
Nickel		p-Cresol (4-Methylphenol)	
Selenium		Dibenzo(a,h)anthracene	
Vanadium		Di-n-butylphthalate	
Zinc		Fluoranthene	

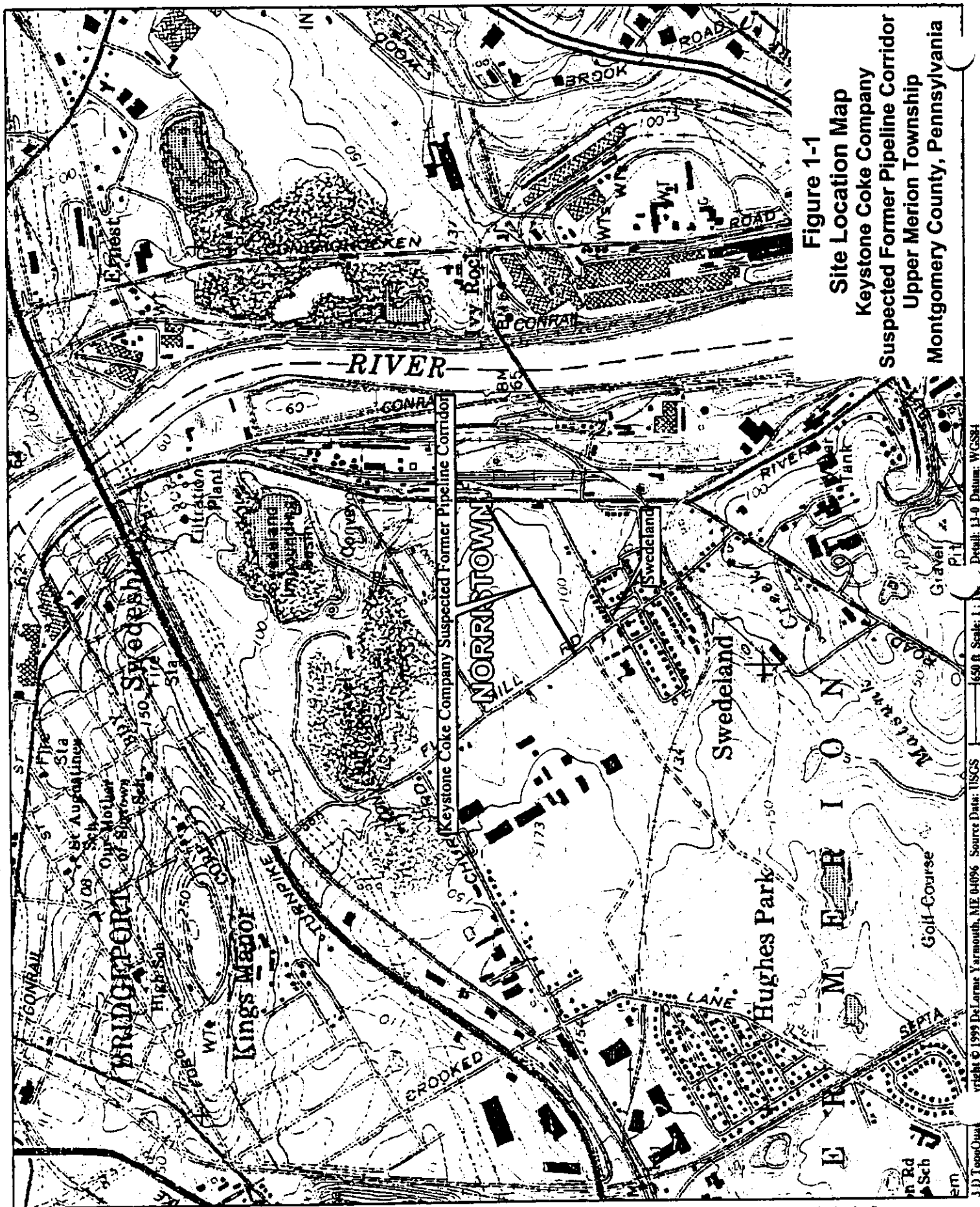
The Keystone Coke Company Suspected\* Former Pipeline Corridor Site is located in Upper Merion Township, approximately one mile northwest of Conshohocken (see Figure 1-1). For the purposes of this *Act 2 Statewide Health Standard Final Report*, the "Site" is defined as the tract of land on which the underground waste ammonia liquor (WAL) pipeline was located prior to its excavation in December 1999. The length of the Site was 2,100 ft and the width of the excavation area was less than 10 ft. Therefore, the total area of the Site is estimated at 21,000 square feet or approximately one-half acre. The Site is a part of a larger vacant property owned by Keystone Coke Company (Keystone). That larger property is comprised of approximately 63 acres. The Site runs from the right of way (ROW) of River Road (Route 23) to the ROW of Flint Hill Road and the larger vacant property is located between those two roads.

Alan Wood Steel Co. and its predecessor, Rainey-Wood Coke Co., operated a coke and coke byproduct manufacturing facility near Swedeland, Pennsylvania from 1919 until 1977. The manufacturing facility was located on the west side of the Schuylkill River, and was bordered by River Road (Route 23) to its west. The subject Site and the larger vacant property on which the Site is located are immediately west of River Road and extend to Flint Hill Road. After Alan Wood declared bankruptcy in 1977, the manufacturing facility and the adjacent vacant property were sold to the Keystone Coke Company. Keystone Coke Company operated the manufacturing facility from 1978 until its closure in 1981.

The coking process typically generates coal gas, light oils, tarry materials containing phenolic compounds and naphthalene, ammonia, phenols, cyanide, and associated wastewaters. WAL is a liquid waste generated during the coke byproduct recovery process. Alan Wood or its predecessor constructed a fixed pipeline (herein referred to as the WAL pipeline) to pump wastewater (which was often referred to as WAL) from the plant to quarries approximately one mile west of the Site. It is believed that Alan Wood began discharging WAL to one or more of the quarries at some point between 1919 and 1924. Over time, various

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\* The term "suspected" is used because at the time the NIR was submitted, the existence of an underground pipeline was suspected. Excavation activities confirmed the presence of the former underground pipeline.



changes were made to improve tar recovery at the coke plant, and the overall nature of the WAL improved. These improvements included, first, the construction of a tar recovery plant, then, in the 1970's the installation of a wastewater treatment plant, and, finally, the upgrade of the wastewater treatment plant after 1977.

Discharge to the quarry ceased on 31 December 1980, when Keystone Coke Company implemented a zero discharge system. The coke plant ceased operating altogether in 1981.

At the time Keystone Coke Company purchased the coke manufacturing plant, the WAL pipeline was an above ground structure for most of its length, resting on railroad ties, such that the bottom of the pipe was approximately one foot above the ground. The pipeline ran underground only where it crossed roads (so as not to interfere with traffic). At various times between closure of the coke plant and 1991, Keystone dismantled all remaining structures associated with the coke plant and removed all above ground portions of the WAL pipeline located on property owned by Keystone. This included all above ground portions of the pipeline running from River Road to Flint Hill Road. The ends of any portion of the pipeline running underground was capped, although the pipeline was dry at the time of removal (since use of the pipeline had ceased years before). In 1998, a buried section of the WAL pipeline running beneath Flint Hill Road was discovered by Upper Merion Township workers and that portion of the pipeline and associated contaminated soils were voluntarily removed by Beazer East Incorporated (Beazer), Keystone, and Vesper Corporation (Vesper) under USEPA oversight. This was and still is believed to have been a portion of the above grade WAL pipeline which ran underground to cross the road at this point, as discussed above.

Shortly after the Flint Hill Road segment was removed, Liberty Property Trust discovered sections of underground pipeline on property owned by Liberty during construction activities. This underground pipe was located along the route of another section of the above grade WAL pipeline, which had been removed by Liberty's predecessor in title. It is believed that the underground pipeline must have been abandoned at some time prior to the early 1950's, in light of witness recollection that the pipeline was located above ground during the interviewee's earliest memories from that period. Because of the discovery of buried pipeline sections on Liberty's property, Keystone, Vesper and Beazer (the "Group") suspected that an underground pipeline might exist along the route of the former WAL above ground pipeline on the Site. The Group considered the possibility that leaks from any of the pipelines may have occurred and initiated an action to investigate and remove any underground pipeline, associated soils and any contamination that might be encountered. The

remainder of this *Act 2 Statewide Health Standard Final Report* is organized into the following sections:

- Section 2: Site Characterization
- Section 3: Description of Pipeline Excavation and Removal Activities
- Section 4: Demonstration of Attainment of Non-Residential Statewide Health Standards for Soils
- Section 5: Ecological Screening Assessment
- Section 6: Post-Remediation Care Plan
- Section 7: Conclusions

No pre-remediation site characterization soil or ground water quality sampling was conducted as part of the pipeline excavation and removal activities. Based upon site characterization data collected during other site investigations in the area, the following general site characterization data are applicable for the Site.

The site is underlain by a narrow east-west trending band of the Cambrian-aged Elbrook Formation. The Elbrook Formation is characterized as a light-gray to yellowish-gray, finely-laminated, siliceous limestone with interbeds of dolomite. It is moderately resistant to weathering, with an overlying soil mantle that is thin to moderately deep and characterized by pinnacles. The contact between the Elbrook Formation and the Ordovician-aged Conestoga Formation occurs just a few yards south of the site. The Conestoga Formation is a medium gray, micaceous, impure limestone with shale and phyllitic partings. It unconformably overlies the Elbrook Formation.

Regionally, both carbonates have a strike ranging from north 75 degrees east (N75E) to north 85 degrees east (N85E). Dip angles are southerly and range from 45 degrees to nearly 70 degrees. Locally, the strike of the Conestoga was measured at N85W with an average dip of 66 degrees southwest.

The McCoy Quarry is located approximately 1,300 feet northwest of the Site and pumps approximately 2.6 million gallons per day (MGD) to dewater the quarry, based on review of their 1998 Annual Ground Water Withdrawal Report filed with the Delaware River Basin Commission. Due to the pumping and the resulting cone of depression that is created, the direction of the hydraulic gradient beneath the Site is expected to be north/northwest toward the quarry. However, due to the proximity of the Schuylkill River, a component of the hydraulic gradient may flow to the east.

Residential use of the Site is highly unlikely. The Site has historically been and is currently zoned heavy industrial. If residential use of any portion of the Site were to be proposed, it would require Township approval of a zoning change for the Site.

### 3.0

## **DESCRIPTION OF PIPELINE EXCAVATION AND DISPOSAL ACTIVITIES**

In December 1999, Keystone Coke Company, Beazer East Incorporated and Vesper Corporation retained Environmental Resources Management, Inc. (ERM) to undertake the following activities pertaining to the on-Site WAL pipeline:

- Conduct a magnetometer survey to determine the presence or absence of any buried WAL pipeline;
- Remove any existing pipeline, adjacent soils and any contaminated soils for proper off-Site disposal; and
- Complete post-excavation confirmatory sampling and analyses.

Each of these activities is described in detail, below.

### 3.1

## **MAGNETOMETER SURVEY**

ERM used a Schonstedt GA-52B magnetic locator to survey the potential pipeline locations. Locations identified by the magnetic locator with a positive response for buried magnetic anomalies were marked for later excavation. Following completion of the magnetometer survey, ERM excavated several areas identified by the magnetic locator as potential pipeline locations to determine the linear extent and depth of the pipeline. Where the pipeline was present, it was buried approximately two to three feet below ground surface. Figure 3-1 indicates the segments of the pipeline where the pipe existed as confirmed by the magnetometer survey and subsequent exploratory excavation.

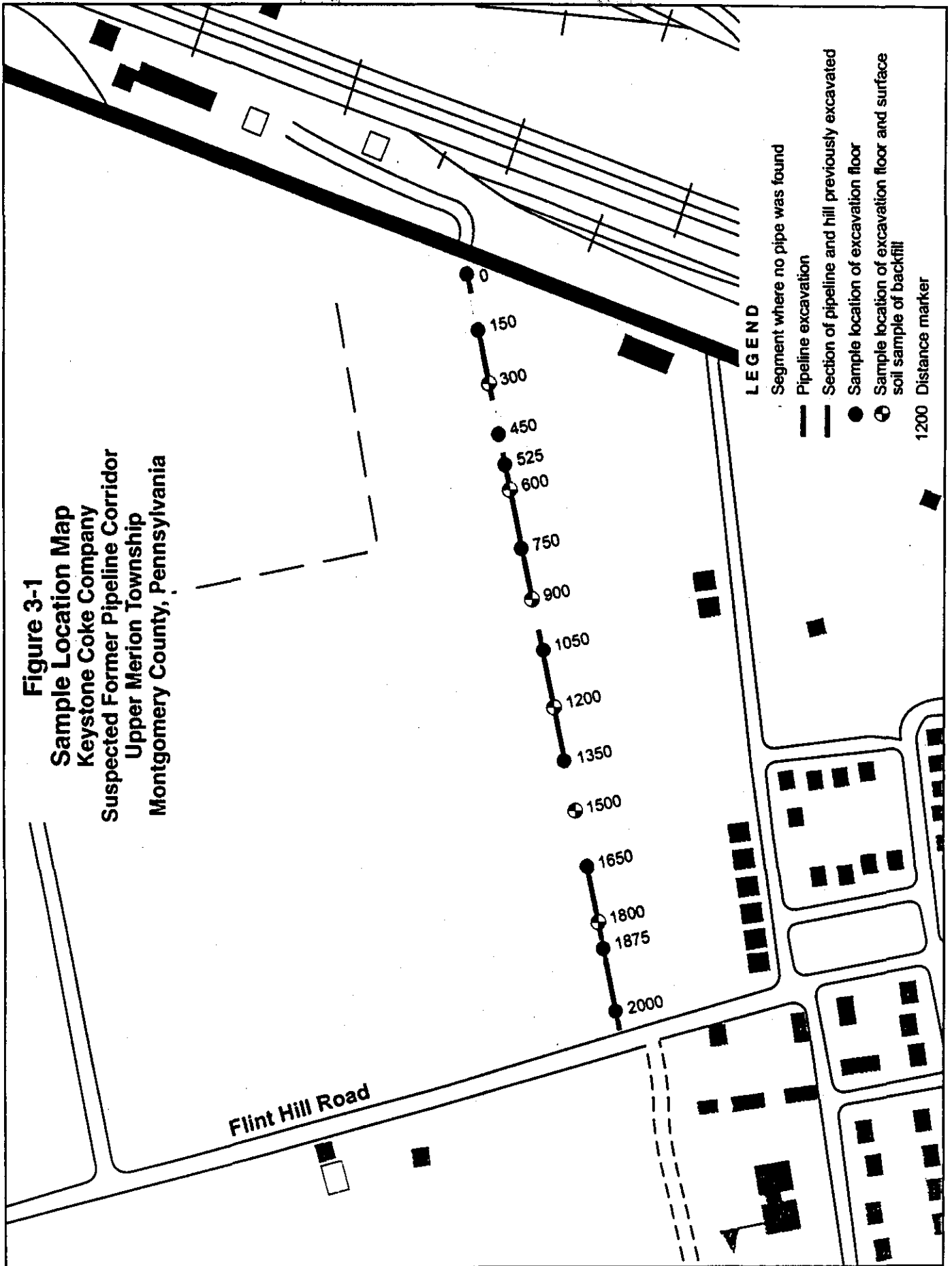
### 3.2

## **PIPELINE REMOVAL AND OFF-SITE DISPOSAL**

The entire length of the pipeline route was excavated to the ROWs for Flint Hill and River Roads and any remaining pipeline and adjacent soils were removed. The end of the pipe within the ROWs was sealed with expandable foam. As a conservative measure, the excavation was planned to remove all soils immediately adjacent to the pipeline as well as soils with staining, odors or elevated photoionization detector (PID) readings that would suggest a possible impact from releases, if any, of pipeline contents. However, no stained soils, odor or other evidence of leakage was observed at any location along the pipe. One segment of pipe, approximately 1,300 feet west of River Road, contained black water. This

**Figure 3-1**

**Sample Location Map**  
**Keystone Coke Company**  
**Suspected Former Pipeline Corridor**  
**Upper Merion Township**  
**Montgomery County, Pennsylvania**



pipe segment was removed and the remaining soils were overexcavated to be certain that none of the black water that may have drained to the surrounding soils during the excavation remained in the excavated area. No PID detections were observed at any location along the length of the excavation during the excavation activities. All excavated soils were stockpiled and subsequently transported off-Site for proper disposal. A total of 193.5 tons of soil (2,722 cubic yards) and pipeline segments were removed and transported off-Site to the Clean Rock Industries Landfill in Hagerstown, Maryland for proper disposal. Bills of lading for the disposed materials are provided in Appendix A.

### 3.3

#### **POST-EXCAVATION CONFIRMATORY SAMPLING**

One post-excavation confirmatory sample was taken in the floor of the excavation (3.5 ft below original grade) every 150 feet (measured from the ROW of River Road) along the length of the pipeline excavation (sixteen sample locations). *PA Code*, Chapter 250, Section 703(d)(2) requires that at least twelve samples be collected for soil volumes up to 3,000 cu. yd.

Once the confirmatory samples were collected, the excavation was backfilled with the Site soils remaining along the perimeter of the excavation to restore the Site to its original grade. Surficial soil samples (6-12 inches below grade) were collected at 300 ft intervals along the former pipeline route to confirm that the newly-placed surficial soils met Act 2 Non-Residential Statewide Health Standards (six sample locations). Copies of the Field Representative Daily Reports are included as Appendix B. Soil sampling locations are presented in Figure 3-1.

All soil samples were collected using properly decontaminated stainless steel hand tools and En-Core samplers. Confirmatory samples were collected from the floor of the excavation (0-6 inches below the surface of the excavation). Surficial samples were collected from depth of 6-12 inches below grade.

All of the surficial samples (designated "SS") and confirmatory samples (designated "CS") were analyzed by Severn Trent Laboratories (STL) in Houston, Texas (Pennsylvania Laboratory Certification Number 82004). Each of the soil samples was analyzed for Target Compound List (TCL) volatile organic compounds, TCL semivolatile organic compounds, Target Analyte List (TAL) metals and USEPA Contract Laboratory Program (CLP) cyanide. The full STL analytical data packages for the soil samples are provided in Appendices C through F.

## DEMONSTRATION OF ATTAINMENT OF STATEWIDE HEALTH STANDARDS FOR SOILS

The analytical results for the post-excavation confirmatory sampling and post-backfilling surficial soil sampling are summarized in Tables 4-1 and 4-2, respectively. Only those regulated substances with at least one positive detection are shown on Tables 4-1 and 4-2. Analytical results for benzene, ethylbenzene, toluene and total xylenes are also presented in these tables because these compounds were typically present in the WAL.

The analytical data were compared to the appropriate Statewide Health Standard MSCs for non-residential direct contact with soils and soil-to-ground water for non-residential soils. No exceedences of the Statewide Health Standard MSCs for Non-Residential Soils were detected. Therefore, the soils remaining on-Site meet the Statewide Health Standards for Non-Residential Soils.

Keystone, Beazer and Vesper request Cleanup Liability Protection, as is provided in Chapter 5, Section 501, of the Land Recycling and Environmental Remediation Standards Act, for all regulated substances analyzed for in soil on the Site, including the following regulated substances detected in soil for which attainment of the Statewide Health Standards for soils has been demonstrated using the Non-Residential Medium-Specific Concentrations:

<u>Inorganics</u>	<u>Volatile Organics</u>	<u>Semivolatile Organics</u>	
Aluminum	Acetone	Acenaphthene	Fluorene
Antimony	Benzene	Acenaphthylene	Indeno(1,2,3-cd)pyrene
Arsenic	2-Butanone	Acetophenone	2-Methylnaphthylene
Barium	Carbon Disulfide	Anthracene	Naphthalene
Beryllium	Dichloromethane	Benzo(a)anthracene	2-Nitrophenol
Cadmium	Ethylbenzene	Benzo(a)pyrene	Phenanthrene
Chromium	Toluene	Benzo(b)fluoranthene	Phenol
Cobalt	1,1,2-Trichloroethane	Benzo(ghi)perylene	Pyrene
Copper	Xylenes (total)	Benzo(k)fluoranthene	
Cyanide		Butylbenzylphthalate	
Iron		Carbazole	
Lead		4-Chloro-3-methylphenol	
Manganese		Chrysene	
Mercury		o-Cresol (2-Methylphenol)	
Nickel		p-Cresol (4-Methylphenol)	
Selenium		Dibenzo(a,h)anthracene	
Vanadium		Di-n-butylphthalate	
Zinc		Fluoranthene	

Table 4-1  
**Confirmatory Sampling Results for**  
**Regulated Substances with at Least One Detect**  
**Keystone Coke Company Suspected Former Pipeline Corridor**  
**Upper Merion Township, Montgomery County, Pennsylvania**

ERM ID Lab ID	PADEP Act 2 Non-Residential MSC (16 Aug 97)		CS-000	CS-150	CS-300	CS-450	CS-525	CS-600
	Direct Contact Subsurface Soil (2-15 ft)	Soil to GW Used Aquifer (TDS ≤ 2500)	294768	294769	294770	294771	294772	294773
Date Sampled			21-Dec-99	21-Dec-99	21-Dec-99	21-Dec-99	21-Dec-99	21-Dec-99
<b>Inorganics</b>								
Aluminum	190,000	NA	27,800	16,600	21,100	22,400	10,600	16,100
Arsenic	190,000	150	13.4	5.6	8.8	9.9	<0.88	<0.9
Barium	190,000	8,200	38.9 B	34.6 B	39.9 B	48.5 B	51.1	44.5 B
Beryllium	190,000	320	0.65 B	<0.05	<0.05	0.62 B	<0.05	<0.05
Cadmium	190,000	38	0.49 B	0.33 B	0.51 B	2	0.13 B	0.14 B
Chromium	190,000	970	11.5	18.9	21.3	31.2	22.6	16.1
Cobalt	190,000	610	19.9	8.2 B	5.7 B	13.9 B	7.4 B	6.1 B
Copper	190,000	36,000	36.7	20.8	24.3	47.6	16.9	16.1
Cyanide	190,000	200	2.1	8.2	14.3	15.8	1.1	13.2
Iron	190,000	NA	34,200	30,700	35,400	58,400	24,300	26,600
Lead	190,000	450	2.2	14.0	14.2	15.9	8.6	9.8
Manganese	190,000	NA	72	132	129	150	184	130
Mercury	190,000	10	0.1 B	<0.04	<0.04	<0.05	<0.04	<0.04
Nickel	190,000	650	36.1	10.9	11.0	20.3	12.2	10.2
Selenium	190,000	26	2.1	1.6	3.3	5.5	2.6	<1.4
Vanadium	190,000	72,000	34.0	48.8	50.3	62.6	41.3	42.6
Zinc	190,000	12,000	78.9	37.8	44.7	129.0	40.5	43.6
<b>Volatile Organic Compounds</b>								
Acetone	10,000	1,000	0.01 J	<0.012	<0.012	<0.014	<0.012	<0.012
Benzene	230	0.5	<0.012	<0.012	<0.012	<0.014	<0.012	<0.012
Dichloromethane	4,000	0.5	0.006 JB	0.005 JB	0.005 JB	0.006 JB	0.006 JB	<0.012
Ethylbenzene	10,000	70	<0.012	<0.012	<0.012	<0.014	<0.012	<0.012
Toluene	10,000	100	<0.012	<0.012	<0.012	<0.014	<0.012	<0.012
Xylenes (total)	10,000	1,000	<0.012	<0.012	<0.012	<0.014	<0.012	<0.012
<b>Semivolatile Organic Compounds</b>								
Acenaphthene	190,000	4,300	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Acenaphthylene	190,000	4,400	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Acetophenone	10,000	1,000	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Anthracene	190,000	230	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Benzo(a)anthracene	190,000	320	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Benzo(a)pyrene	190,000	46	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Benzo(b)fluoranthene	190,000	160	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Benzo(ghi)perylene	190,000	180	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Benzo(k)fluoranthene	190,000	600	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Butylbenzyl phthalate	10,000	10,000	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Carbazole	NR	NR	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Chrysene	190,000	220	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Cresol, p - (4-Methylphenol)	1,100	10	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Dibenzo(a,h)anthracene	190,000	160	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Di-n-butyl phthalate	10,000	4,100	<0.39	0.079 J	0.05 J	<0.92	0.041 J	<0.40
Fluoranthene	190,000	3,300	<0.39	<0.38	0.021 J	<0.92	<0.39	<0.40
Fluorene	190,000	380	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Indeno(1,2,3-cd)pyrene	190,000	28,000	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Methylnaphthalene, 2-	10,000	10,000	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Naphthalene	190,000	5	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40
Phenanthrene	190,000	11,000	<0.39	<0.38	0.02 J	<0.92	<0.39	<0.40
Pyrene	190,000	220	<0.39	<0.38	<0.39	<0.92	<0.39	<0.40

**Notes:**

All samples were collected at depths of 0-6 inches below the floor of the excavation.

All units presented in mg/kg (ppm).

All analytic results presented on a dry weight basis.

NA = Not applicable.

For Inorganics

B = Reported value is less than CRDL but greater than IDL.

For Organics

J = Estimated value.

B = Analyte also detected in a blank.

D = Result detected in a diluted sample.

Table 4-1  
**Confirmatory Sampling Results for**  
**Regulated Substances with at Least One Detect**  
**Keystone Coke Company Suspected Former Pipeline Corridor**  
**Upper Merion Township, Montgomery County, Pennsylvania**

ERM ID Lab ID	PADEP Act 2		XX-DUP					
	Non-Residential	MSC (16 Aug 97)	CS-750	CS-900	(CS-900 DUP)	CS-1050	CS-1200	CS-1350
Date Sampled	Direct Contact Subsurface Soil (2-15 ft)	Soil to GW Used Aquifer (TDS ≤ 2500)	294774	294775	294789	294779	294780	294781
			21-Dec-99	21-Dec-99	21-Dec-99	23-Dec-99	23-Dec-99	23-Dec-99
<b>Inorganics</b>								
Aluminum	190,000	NA	10,200	10,900	10,600	13,900	12,500	10,500
Arsenic	190,000	150	<0.91	2.4	1.1 B	13.8	2.4	4.0
Barium	190,000	8,200	78	57	65	37.1 B	35.2 B	63
Beryllium	190,000	320	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium	190,000	38	<0.07	<0.07	<0.07	0.27 B	0.2 B	0.23 B
Chromium	190,000	970	20.0	18.7	18.3	24.0	18.8	18.9
Cobalt	190,000	610	4.4 B	10.9 B	11.3 B	7.6 B	11.6 B	4.9 B
Copper	190,000	36,000	15.9	15.7	16.2	16.8	17.1	14.7
Cyanide	190,000	200	2.8	1.2	1.4	6.7	12.6	4.5
Iron	190,000	NA	17,900	22,200	23,000	27,900	25,600	25,300
Lead	190,000	450	10.2	10.2	9.4	11.0	11.0	9.9
Manganese	190,000	NA	67	180	180	230	282	102
Mercury	190,000	10	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Nickel	190,000	650	9.9	15.4	14.9	9.5	12.7	10.9
Selenium	190,000	26	<1.4	3.9	2.5	4.4	5.4	<1.3
Vanadium	190,000	72,000	37.1	41.2	41.3	45.8	40.4	35.1
Zinc	190,000	12,000	51.4	39.7	38.2	38.2	40.9	37.1
<b>Volatile Organic Compounds</b>								
Acetone	10,000	1,000	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Benzene	230	0.5	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Dichloromethane	4,000	0.5	<0.012	<0.012	<0.012	<0.012	<0.012	0.008 JB
Ethylbenzene	10,000	70	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Toluene	10,000	100	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Xylenes (total)	10,000	1,000	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
<b>Semivolatile Organic Compounds</b>								
Acenaphthene	190,000	4,300	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Acenaphthylene	190,000	4,400	<0.81	<0.78	0.066 J	<0.39	<0.39	<0.39
Acetophenone	10,000	1,000	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Anthracene	190,000	230	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Benzo(a)anthracene	190,000	320	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Benzo(a)pyrene	190,000	46	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Benzo(b)fluoranthene	190,000	160	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Benzo(ghi)perylene	190,000	180	<0.81	<0.78	0.05 J	<0.39	<0.39	<0.39
Benzo(k)fluoranthene	190,000	600	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Butylbenzyl phthalate	10,000	10,000	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Carbazole	NR	NR	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Chrysene	190,000	220	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Cresol, p - (4-Methylphenol)	1,100	10	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Dibenzo(a,h)anthracene	190,000	160	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Di-n-butyl phthalate	10,000	4,100	0.078 J	<0.78	<0.39	<0.39	<0.39	<0.39
Fluoranthene	190,000	3,300	0.048 J	<0.78	<0.39	<0.39	<0.39	<0.39
Fluorene	190,000	380	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Indeno(1,2,3-cd)pyrene	190,000	28,000	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Methylnaphthalene, 2-	10,000	10,000	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39
Naphthalene	190,000	5	0.053 J	<0.78	<0.39	<0.39	<0.39	<0.39
Phenanthrene	190,000	11,000	0.051 J	<0.78	<0.39	<0.39	<0.39	<0.39
Pyrene	190,000	220	<0.81	<0.78	<0.39	<0.39	<0.39	<0.39

**Notes:**

All samples were collected at depths of 0-6 inches below the floor of the excavation.

All units presented in mg/kg (ppm).

All analytic results presented on a dry weight basis.

NA = Not applicable.

For inorganics

B = Reported value is less than CRDL but greater than IDL.

For Organics

J = Estimated value.

B = Analyte also detected in a blank.

D = Result detected in a diluted sample.

Table 4-1  
 Confirmatory Sampling Results for  
 Regulated Substances with at Least One Detect  
 Keystone Coke Company Suspected Former Pipeline Corridor  
 Upper Merion Township, Montgomery County, Pennsylvania

ERM ID Lab ID	PADEP Act 2 Non-Residential MSC (16 Aug 97)		CS-1500 294782	CS-1650 294783	CS-1800 294784	CS-1875 294785	CS-2050 294786
	Direct Contact Subsurface Soil (2-15 ft)	Soil to GW Used Aquifer (TDS ≤ 2500)	23-Dec-99	23-Dec-99	23-Dec-99	23-Dec-99	23-Dec-99
<b>Inorganics</b>							
Aluminum	190,000	NA	9,420	15,000	8,840	15,700	12,500
Arsenic	190,000	150	<0.82	<0.90	1.2 B	2.4 B	2.4
Barium	190,000	8,200	33.8 B	45.1 B	28.6 B	37.7 B	41.1 B
Beryllium	190,000	320	<0.04	<0.05	<0.04	<0.05	<0.05
Cadmium	190,000	38	0.21 B	<0.07	0.12 B	<0.07	0.07 B
Chromium	190,000	970	16.7	22.4	25.5	18.3	18.4
Cobalt	190,000	610	11.6	6.1 B	15.1	5 B	7.7 B
Copper	190,000	36,000	19.2	15.6	20.6	14.3	15.0
Cyanide	190,000	200	1.4	9.4	2.6	3.8	1.3
Iron	190,000	NA	23,500	22,400	22,000	22,800	23,500
Lead	190,000	450	12.3	9.4	12.0	9.7	11.9
Manganese	190,000	NA	150	121	229	97	230
Mercury	190,000	10	<0.04	<0.04	<0.04	<0.04	<0.04
Nickel	190,000	650	12.2	14.8	12.5	9.6 B	9.8
Selenium	190,000	26	3.1	1.9	1.3	3.4	2.8
Vanadium	190,000	72,000	34.3	40.7	28.6	38.5	35.7
Zinc	190,000	12,000	47.3	48.3	91.6	41.3	51.4
<b>Volatile Organic Compounds</b>							
Acetone	10,000	1,000	<0.011	<0.012	<0.011	<0.012	<0.012
Benzene	230	0.5	<0.011	<0.012	<0.011	<0.012	<0.012
Dichloromethane	4,000	0.5	<0.011	0.008 JB	0.006 JB	0.007 JB	0.006 JB
Ethylbenzene	10,000	70	<0.011	<0.012	<0.011	<0.012	<0.012
Toluene	10,000	100	<0.011	<0.012	<0.011	<0.012	<0.012
Xylenes (total)	10,000	1,000	<0.011	<0.012	<0.011	<0.012	<0.012
<b>Semivolatile Organic Compounds</b>							
Acenaphthene	190,000	4,300	<0.37	<0.40	0.40	<0.40	<0.39
Acenaphthylene	190,000	4,400	<0.37	<0.40	6.9 D	0.51	0.14 J
Acetophenone	10,000	1,000	<0.37	<0.40	0.084 J	<0.40	<0.39
Anthracene	190,000	230	<0.37	<0.40	6.7 D	0.027 J	<0.39
Benzo(a)anthracene	190,000	320	<0.37	<0.40	49 D	<0.40	<0.39
Benzo(a)pyrene	190,000	46	<0.37	<0.40	46 D	0.14 J	<0.39
Benzo(b)fluoranthene	190,000	160	<0.37	<0.40	48 D	0.064 J	<0.39
Benzo(ghi)perylene	190,000	180	<0.37	<0.40	24 D	0.29 J	0.098 J
Benzo(k)fluoranthene	190,000	600	<0.37	<0.40	9.3 D	0.054 J	<0.39
Butylbenzyl phthalate	10,000	10,000	<0.37	<0.40	<0.38	<0.40	0.037 J
Carbazole	NR	NR	<0.37	<0.40	0.88	<0.40	<0.39
Chrysene	190,000	220	<0.37	<0.40	41 D	<0.40	<0.39
Cresol, p - (4-Methylphenol)	1,100	10	<0.37	<0.40	0.082 J	<0.40	<0.39
Dibenzo(a,h)anthracene	190,000	160	<0.37	<0.40	7.3 D	0.07 J	<0.39
Di-n-butyl phthalate	10,000	4,100	<0.37	<0.40	0.19 J	0.21 J	<0.39
Fluoranthene	190,000	3,300	<0.37	<0.40	74 D	<0.40	<0.39
Fluorene	190,000	380	<0.37	<0.40	1.7	<0.40	<0.39
Indeno(1,2,3-cd)pyrene	190,000	28,000	<0.37	<0.40	29 D	0.44	0.12 J
Methylnaphthalene, 2-	10,000	10,000	<0.37	<0.40	0.38	<0.40	<0.39
Naphthalene	190,000	5	<0.37	<0.40	0.72	0.057 J	<0.39
Phenanthrene	190,000	11,000	<0.37	<0.40	26 D	<0.40	<0.39
Pyrene	190,000	220	<0.37	<0.40	71 D	0.022 J	0.022 J

Notes:

All samples were collected at depths of 0-6 inches below the floor of the excavation.

All units presented in mg/kg (ppm).

All analytic results presented on a dry weight basis.

NA = Not applicable.

For Inorganics

B = Reported value is less than CRDL but greater than IDL.

For Organics

J = Estimated value.

B = Analyte also detected in a blank.

D = Result detected in a diluted sample.

**Table 4-2**  
**Surface Soil Sampling Results for**  
**Regulated Substances with at Least One Detect**  
**Keystone Coke Company Suspected Former Pipeline Corridor**  
**Upper Merion Township, Montgomery County, Pennsylvania**

ERM ID Lab ID	PADEP Act 2		SS-300 295311	SS-600 295315	SS-900 295316	SS-1200 295317	SS-1500 295318	SS-1800 295319
	Non-Residential Direct Contact Surface Soil (0-2 ft)	MSC (16 Aug 97) Soil to GW Used Aquifer (TDS ≤ 2500)						
Date Sampled			27-Dec-99	27-Dec-99	27-Dec-99	27-Dec-99	27-Dec-99	27-Dec-99
<b>Inorganics</b>								
Aluminum	190,000	NA	6,420	9,920	9,270	8,440	7,800	7,900
Antimony	1,100	27	1.2 B	0.88 B	0.99 B	<0.87	<0.82	<0.82
Arsenic	53	150	4.9	10.9	35.2	14.7	4.9	6.3
Barium	190,000	8,200	57.6	39.6 B	59.7	69.6	53.9	111
Beryllium	18	320	0.57 B	0.62 B	0.48 B	0.53 B	0.41 B	0.81 B
Cadmium	1,400	38	0.48 B	1.1 B	0.62 B	0.91 B	0.48 B	0.50 B
Chromium	14,000	970	26.4	15.2	15.2	13.3	13.8	10.9
Cobalt	170,000	610	4.2 B	12.0	6.5 B	7.1 B	5.4 B	8.6 B
Copper	190,000	36,000	10.7	21.7	10.9	14.3	8.8	10.9
Cyanide	56,000	200	3.2	8.1	2.8	1.2 B	0.96 B	0.63 B
Iron	190,000	NA	12,500	30,000	16,800	19,300	17,000	14,700
Lead	1,000	450	26.2	20.6	43.4	52.1	10.7	22.6
Manganese	130,000	NA	748	319	421	494	159	650
Mercury	240	10	0.09 B	0.08 B	1.4	0.61	<0.04	0.05 B
Nickel	56,000	650	4.5 B	12.8	9.3 B	10.2	7.8 B	9.4 B
Selenium	14,000	26	< 0.81	1.9	<0.85	<0.87	<0.82	<0.82
Vanadium	20,000	72,000	31.4	42.7	29.1	30.6	28.8	22.4
Zinc	190,000	12,000	53.4	78.0	67.5	103	36.1	49.2
<b>Volatile Organic Compounds</b>								
Acetone	10,000	1,000	0.02	0.041	0.053	0.077	0.032	0.046
Benzene	200	0.5	< 0.01	< 0.01	0.003 J	<0.012	0.002 J	< 0.01
Butanone, 2- (MEK)	10,000	580	< 0.01	< 0.01	0.009 J	<0.012	< 0.01	0.01 J
Carbon disulfide	10,000	410	0.002 J	< 0.01	<0.011	<0.012	< 0.01	< 0.01
Dichloromethane	3,500	0.5	0.004 JB	0.005 JB	0.006 JB	0.009 JB	0.005 JB	0.006 JB
Ethylbenzene	10,000	70	< 0.01	< 0.01	<0.011	<0.012	< 0.01	< 0.01
Toluene	10,000	100	< 0.01	< 0.01	<0.011	<0.012	< 0.01	< 0.01
Trichloroethane, 1,1,2-	100	0.5	0.006 J	< 0.01	<0.011	<0.012	< 0.01	< 0.01
Xylenes (total)	10,000	1,000	< 0.01	< 0.01	<0.011	<0.012	< 0.01	< 0.01
<b>Semivolatile Organic Compounds</b>								
Acenaphthene	170,000	4,300	<0.78	< 0.4	< 0.4	0.036 J	<0.39	<0.39
Acenaphthylene	170,000	4,400	<0.78	0.067 J	0.48	1.2	0.021 J	0.036 J
Acetophenone	10,000	1,000	<0.78	<0.04	0.1 J	0.11 J	<0.39	<0.39
Anthracene	190,000	230	<0.78	< 0.4	0.09 J	1.4	<0.39	<0.39
Benzo(a)anthracene	110	320	0.2 J	0.075 J	0.42	7 D	<0.39	0.082 J
Benzo(a)pyrene	11	46	0.27 J	0.097 J	0.78	6.3 D	<0.39	0.1 J
Benzo(b)fluoranthene	110	160	0.27 J	0.1 J	0.82	8.3 D	<0.39	0.085 J
Benzo(ghi)perylene	170,000	180	0.26 J	0.14 J	1.3	5.3 D	0.037 J	0.094 J
Benzo(k)fluoranthene	1,100	600	0.29 J	0.099 J	0.6	4.9 D	<0.39	0.1 J
Bis(2-ethylhexyl)phthalate	5,700	130	0.054 J	< 0.4	0.02 J	0.045 J	<0.39	0.015 J
Butylbenzyl phthalate	10,000	10,000	0.055 J	0.02 J	0.03 J	0.048 J	<0.39	0.026 J
Carbazole	NR	NR	<0.78	< 0.4	0.12 J	0.88	<0.39	<0.39
Chloro-3-methylphenol, 4-	NR	NR	<0.78	< 0.4	0.12 J	< 0.4	<0.39	<0.39
Chrysene	11,000	220	0.3 J	0.084 J	0.52	6.5 D	<0.39	0.084 J
Cresol, o- (2-Methylphenol)	920	10	<0.78	< 0.4	0.021 J	0.025 J	<0.39	<0.39
Cresol, p- (4-Methylphenol)	920	10	<0.78	< 0.4	0.1 J	0.11 J	<0.39	<0.39
Dibenzo(a,h)anthracene	11	160	0.052 J	0.027 J	0.24 J	1.7	<0.39	0.022 J
Fluoranthene	110,000	3,300	0.33 J	0.093 J	0.3 J	12 D	< 0.4	0.11 J
Fluorene	110,000	580	< 0.8	< 0.4	< 0.4	0.37 J	< 0.4	< 0.4
Indeno(1,2,3-cd)pyrene	110	28,000	0.25 J	0.14 J	1.1	5.7 D	0.04 J	0.11 J
Methylnaphthalene, 2-	10,000	10,000	< 0.8	< 0.4	0.085 J	0.1 J	< 0.4	< 0.4
Naphthalene	110,000	5	0.042 J	0.14 J	0.31 J	0.4 J	< 0.4	< 0.4
Nitrophenol, 2-	170,000	630	< 0.8	< 0.4	< 0.4	0.041 J	< 0.4	< 0.4
Phenanthrene	190,000	11,000	0.15 J	0.03 J	0.099 J	11 D	< 0.4	0.026 J
Phenol	190,000	400	< 0.8	< 0.4	0.1 J	0.096 J	< 0.4	0.12 J
Pyrene	84,000	220	0.33 J	0.09 J	0.46	12 D	< 0.4	< 0.4

**Notes:**

All samples were collected at depths of 6-12 inches below grade.

All units presented in mg/kg (ppm).

All analytic results presented on a dry weight basis.

NA = Not applicable.

For Inorganics

B = Reported value is less than CRDL but greater than IDL.

For Organics

J = Estimated value.

B = Analyte also detected in a blank.

D = Result detected in a diluted sample.

This Ecological Screening Assessment was completed in accordance with regulations (*PA Code*, Chapter 250, Section 311) promulgated under Act 2 by the Pennsylvania Department of Environmental Protection (PADEP). The Ecological Screening procedures allow the remediator to quickly evaluate whether surficial soils or sediments at a site have the potential to pose substantial ecological impacts requiring further evaluation.

The key elements of the Ecological Screening procedure include determining:

- 1) Whether regulated substances other than solely light petroleum product constituents (e.g., gasoline, jet fuel A, kerosene, #2 fuel oil/diesel fuel and benzene, toluene, ethylbenzene and xylenes) are present in the affected media;
- 2) Whether the site size is greater than two acres or the impacted area of impacted sediments is greater than 1,000 square feet;
- 3) Whether Constituents of Potential Ecological Concern are present on the site;
- 4) Whether species of concern or habitats of concern are present on the site; and
- 5) Whether completed exposure pathways, taking into account the current or planned future land use of the site, exist at the site.

If any of the five key elements are not applicable to the site, completion of the Site Ecological Screening assessment, including an on-site evaluation, is not required.

#### **PRESENCE OF LIGHT PETROLEUM PRODUCTS**

The first element of the ecological screening process is to determine if constituents in soils are solely directly related to light petroleum products. The primary constituents of concern on the Site are inorganics and PAHs. While the WAL was not a petroleum-based process, benzene can be present. Thus, the Site is not exempted from further evaluation based solely on this criterion.

5.2

**SITE SIZE**

The next step of the process is to determine if the Site has impacted soils greater than two acres and/or sediments (including wetland soil) of over 1,000 square feet. There are no sediments (impacted or otherwise) associated with the Site. The Site itself is less than one-half acre in size. Due to the small area of impacted soils, no further ecological evaluation is required under Act 2.

5.3

**SUMMARY**

Due to the small size of the Site (i.e., less than one-half acre), no substantial ecological impact exists at the Site and no further ecological evaluation is required under Act 2.

Pursuant to Section 204 of *Title 25 Pennsylvania Code*, Chapter 250, Keystone, Beazer and Vesper herein provide the Department with a Post-Remediation Care Plan for the Site. This *Final Report* demonstrates attainment of Statewide Non-Residential Health Standards for regulated substances in soils.

Keystone will provide an acknowledgement and restriction to the property deed that the remedial activities undertaken on the Site have been sufficient to demonstrate attainment of Statewide Non-Residential Health Standards for regulated substances in soils. As such, the deed acknowledgement will indicate that the Statewide Standards will remain protective of human health and the environment with the following institutional controls in place:

- The Site will continue to be used for non-residential purposes, provided that the deed acknowledgement may be removed upon a determination or demonstration that the residential or background Statewide Health Standard has been achieved.

## CONCLUSIONS

Keystone, Beazer and Vesper have identified the existence of a former underground waste ammonia liquor pipeline on the Site. This pipeline and associated soils have been excavated and removed for proper off-Site disposal. Post-excavation confirmatory sampling data meet PADEP's Statewide Health Standards for Nonresidential Soils.

Keystone, Beazer and Vesper request Cleanup Liability Protection, as is provided in Chapter 5, Section 501, of the Land Recycling and Environmental Remediation Standards Act, for all regulated substances analyzed for in soil on the Site, including the following regulated substances detected in soil for which attainment of the Statewide Health Standards for soils has been demonstrated using the Non-Residential Medium-Specific Concentrations:

<u>Inorganics</u>	<u>Volatile Organics</u>	<u>Semivolatile Organics</u>	
Aluminum	Acetone	Acenaphthene	Fluorene
Antimony	Benzene	Acenaphthylene	Indeno(1,2,3-cd)pyrene
Arsenic	2-Butanone	Acetophenone	2-Methylnaphthylene
Barium	Carbon Disulfide	Anthracene	Naphthalene
Beryllium	Dichloromethane	Benzo(a)anthracene	2-Nitrophenol
Cadmium	Ethylbenzene	Benzo(a)pyrene	Phenanthrene
Chromium	Toluene	Benzo(b)fluoranthene	Phenol
Cobalt	1,1,2-Trichloroethane	Benzo(ghi)perylene	Pyrene
Copper	Xylenes (total)	Benzo(k)fluoranthene	
Cyanide		Butylbenzylphthalate	
Iron		Carbazole	
Lead		4-Chloro-3-methylphenol	
Manganese		Chrysene	
Mercury		o-Cresol (2-Methylphenol)	
Nickel		p-Cresol (4-Methylphenol)	
Selenium		Dibenzo(a,h)anthracene	
Vanadium		Di-n-butylphthalate	
Zinc		Fluoranthene	

1

AR306234

*Appendix A*  
*Bills of Lading for Disposed*  
*Materials*

AR306235

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# ***Clean Rock***

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1469 Oak Ridge Place • Hagerstown, MD 21740-7485 • 301-791-6220 • Fax 301-790-1825

American Waste Management Services  
1 American Way  
Warren, OH 44484

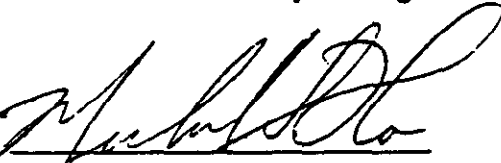
Clean Rock Industries, Inc. does hereby certify that 193.47 tons of petroleum contaminated soil, transported in 9 truck was received on December 28, 1999 under **CRI APPROVAL NUMBER 99423AW** for:

**Generator:** Crater Resources PRP Group  
Flint Hill Rd  
Swedeland, PA 19103

**Job Site:** Crater Resources PRP Group  
Flint Hill Rd  
Swedeland, PA 19103

**Agent:** American Waste Management Services  
1 American Way  
Warren, OH 44484

Subject recycling is performed in accordance with criteria as set forth by the State of Maryland under permit numbers: 98-OPS-3065, 21-6-0214M, and 21-00213. Processing was completed as of January 18, 2000 at Clean Rock Industries, Inc., 1469 Oak Ridge Place, Hagerstown, Maryland. Payment has been made in full, constituting a complete release of financial and environmental liability of the generator.



Michael S. Flora  
General Manager



Vincent P. Iuliano  
Document Administrator

AR306236

# Clean Rock

No 31743

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-AWLoad # 1**SITE ENTRY TICKET****CARRIER NAME & ADDRESS:**

SMITH TRUCKING  
OTTSVILLE, PA

PHONE: 610-847-6585TRUCK #: 01TAG #: AA73677RTRAILER #: 505TAG #: IZ75611R**DRIVER'S NAME:**John S. Walsh**GENERATOR:**

Crater Resources PRP Group  
Flint Hill Road  
Swedeland, PA 19103

PHONE: 609-695-0050**BROKER NAME & ADDRESS:**

American Waste Management Services, Inc.  
One American Way  
Warren, OH 44484

PHONE: 330-856-8800

I HEREBY CERTIFY THAT THE BELOW NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE [Signature]**BROKER REPRESENTATIVE:**PRINT NAME: Raimund A. SundermannSIGNATURE [Signature]**DESCRIPTION OF COMMODITIES:**Non-hazardous Contaminated Soil

RCRA NONHAZARDOUS / DOT NONREGULATED  
SEPARATED AT POINT OF ORIGIN  
DESTINED FOR RECYCLING / REUSE

HAZARD CLASS: Non-hazardousVEHICLE TYPE: Dump TruckVOLUME / UNITS: Est. 22 tons**BILL OF LADING****LOAD DATE AND TIME:**12/27/99 9:00A**RECEIVING DATE AND TIME:****DELIVER TO:**

CLEAN ROCK INDUSTRIES  
1469 OAK RIDGE PLACE  
HAGERSTOWN, MD 21740

**WEIGHTS:**

GROSS: \_\_\_\_\_

TARE: \_\_\_\_\_

NET: \_\_\_\_\_

TONS: \_\_\_\_\_

I HEREBY CERTIFY THAT THE ABOVE NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE \_\_\_\_\_

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306237

# Clean Rock

No 31744

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-AWLoad # 2**SITE ENTRY TICKET****CARRIER NAME & ADDRESS:**

SMITH TRUCKING  
(B+E HAULING)  
OTTSVILLE, PA  
PHONE: 610-947-9525

TRUCK #:

TAG #:

TRAILER #:

TAG #:

DRIVER'S NAME:

**GENERATOR:**

Crater Resources PRP Group  
Flint Hill Road  
Swedeland, PA 19103

PHONE: 609-895-0050

**BROKER NAME & ADDRESS:**

American Waste Management Services, Inc.  
One American Way  
Warren, OH 44484

PHONE: 330-856-3800

I HEREBY CERTIFY THAT THE BELOW NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE

**BROKER REPRESENTATIVE:**PRINT NAME: Raymond A. Gundermann

SIGNATURE

**DESCRIPTION OF COMMODITIES:**

Non-hazardous Contaminated Soil

RCRA NONHAZARDOUS / DOT NONREGULATED  
SEPARATED AT POINT OF ORIGIN  
DESTINED FOR RECYCLING / REUSE

HAZARD CLASS: Non-hazardousVEHICLE TYPE: Dump TruckVOLUME / UNITS: Est. 22 tons**BILL OF LADING****LOAD DATE AND TIME:**

12/28/99 8:15A

**RECEIVING DATE AND TIME:****DELIVER TO:**

CLEAN ROCK INDUSTRIES  
1469 OAK RIDGE PLACE  
HAGERSTOWN, MD 21740

**WEIGHTS:**

GROSS: \_\_\_\_\_

TARE: \_\_\_\_\_

NET: \_\_\_\_\_

TONS: \_\_\_\_\_

I HEREBY CERTIFY THAT THE ABOVE NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306238

# Clean Rock

No 31745

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-AWLoad # 3

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>K.L. GRIMM TRUCKING</u> <u>HAGERSTOWN, MD</u>  <b>PHONE:</b> <u>301-797-0168</u>	<b>TRUCK #:</b> <u>K12</u> <b>TAG #:</b> <u>12543</u>
	<b>TRAILER #:</b> <u></u> <b>TAG #:</b> <u></u>
	<b>DRIVER'S NAME:</b> <u>[Signature]</u>
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u>  <b>PHONE:</b> <u>609-395-0050</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u>  <b>PHONE:</b> <u>330-856-8800</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> <u>[Signature]</u>	<b>BROKER REPRESENTATIVE:</b> <b>PRINT NAME:</b> <u>Raimund A. Gundermann</u> <b>SIGNATURE</b> <u>[Signature]</u>

<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <b>RCRA NONHAZARDOUS / DOT NONREGULATED</b> <b>SEPARATED AT POINT OF ORIGIN</b> <b>DESTINED FOR RECYCLING / REUSE</b>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>Est. 22 tons</u>
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<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> <u>12/28/99</u> <u>8:30A</u>	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>  <b>GROSS:</b> _____  <b>TARE:</b> _____  <b>NET:</b> _____  <b>TONS:</b> _____
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> _____	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306239



No 31746

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-AWLoad # 4

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>J. ROWLAND TRUCKING</u> <u>WILLIAMSPORT, MD</u>  <b>PHONE:</b> <u>301-223-9324</u>	<b>TRUCK #:</b> <u>57</u> <b>TAG #:</b> <u>2-696</u>
	<b>TRAILER #:</b> <u></u> <b>TAG #:</b> <u></u>
	<b>DRIVER'S NAME:</b> <u>John A. [unclear]</u>
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u>  <b>PHONE:</b> <u>609-895-0050</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u>  <b>PHONE:</b> <u>330-856-8800</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> <u>[Signature]</u>	<b>BROKER REPRESENTATIVE:</b>  <b>PRINT NAME:</b> <u>Raimund A. Gundermann</u>  <b>SIGNATURE</b> <u>[Signature]</u>

<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <b>RCRA NONHAZARDOUS / DOT NONREGULATED SEPARATED AT POINT OF ORIGIN DESTINED FOR RECYCLING / REUSE</b>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>Est. 22 tons</u>
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<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> <u>12/28/99</u> <u>8:45 A</u>	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>  <b>GROSS:</b> _____  <b>TARE:</b> _____  <b>NET:</b> _____  <b>TONS:</b> _____
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> _____	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306240

# Clean Rock

No 31747

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL #

99423-AW

Load #

5

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> K.L. GRIMM HAGERSTOWN, MD	<b>TRUCK #:</b> K6-41 <b>TAG #:</b> CDE 19
<b>PHONE:</b> 301-797-0168	<b>TRAILER #:</b> <b>TAG #:</b>
<b>GENERATOR:</b> Crater Resources PRP Group Flint Hill Road Swedeland, PA 19103	<b>DRIVER'S NAME:</b> [Signature]
<b>PHONE:</b> 609-895-0050	<b>BROKER NAME &amp; ADDRESS:</b> American Waste Management Services, Inc. One American Way Warren, OH 44484
<b>PHONE:</b> 330-856-8200	<b>BROKER REPRESENTATIVE:</b>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>	<b>PRINT NAME:</b> Raimund A. Gundermann
<b>SIGNATURE</b> [Signature]	<b>SIGNATURE</b>

<b>DESCRIPTION OF COMMODITIES:</b> Non-hazardous Contaminated Soil	<b>HAZARD CLASS:</b> Non-hazardous
<b>RCRA NONHAZARDOUS / DOT NONREGULATED</b>	<b>VEHICLE TYPE:</b> Dump Truck
<b>SEPARATED AT POINT OF ORIGIN</b>	<b>VOLUME / UNITS:</b> Est. 22 tons
<b>DESTINED FOR RECYCLING / REUSE</b>	

<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> 12/28/95 9:00A	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> CLEAN ROCK INDUSTRIES 1469 OAK RIDGE PLACE HAGERSTOWN, MD 21740	<b>WEIGHTS:</b>
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>	<b>GROSS:</b>
<b>SIGNATURE</b>	<b>TARE:</b>
	<b>NET:</b>
	<b>TONS:</b>

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306241



No 31748

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-AWLoad # 6

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>ROBERTO LUCKING</u> <u>WILLIAMSBURG, MD</u>  <b>PHONE:</b> <u>301-223-9324</u>	<b>TRUCK #:</b> <u>2-3</u> <b>TAG #:</b> <u>111</u>
	<b>TRAILER #:</b> <u>111</u> <b>TAG #:</b> <u>111</u>
	<b>DRIVER'S NAME:</b> <u>Raymond A. Gundermann</u>
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u>  <b>PHONE:</b> <u>609-895-0050</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u>  <b>PHONE:</b> <u>330-856-8800</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> <u>[Signature]</u>	<b>BROKER REPRESENTATIVE:</b>  <b>PRINT NAME:</b> <u>Raymond A. Gundermann</u>  <b>SIGNATURE</b> <u>[Signature]</u>

<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <b>RCRA NONHAZARDOUS / DOT NONREGULATED</b> <b>SEPARATED AT POINT OF ORIGIN</b> <b>DESTINED FOR RECYCLING / REUSE</b>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>Est. 22 tons</u>
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<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> <u>12/28/99</u> <u>9:15A</u>	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>  <b>GROSS:</b> _____ <b>TARE:</b> _____ <b>NET:</b> _____ <b>TONS:</b> _____
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b>	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306242

# Clean Rock

No 31750

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-AWLoad # 7**SITE ENTRY TICKET****CARRIER NAME & ADDRESS:**

HOBBS TRUCKING  
FAIRFIELD, PA  
(717) 334-6596  
PHONE: 334-6596

TRUCK #: 711TAG #: 6-0000

TRAILER #:

TAG #:

DRIVER'S NAME:

**BROKER NAME & ADDRESS:**

American Waste Management Services, Inc.  
One American Way  
Warren, OH 44484

**GENERATOR:**

Crater Resources PRP Group  
Flint Hill Road  
Swedeland, PA 19103

PHONE: 609-895-0050

PHONE: 330-856-8800

I HEREBY CERTIFY THAT THE BELOW NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE [Signature]**BROKER REPRESENTATIVE:**

PRINT NAME:

Raimund A. SundermannSIGNATURE [Signature]**DESCRIPTION OF COMMODITIES:**

Non-hazardous Contaminated Soil

RCRA NONHAZARDOUS / DOT NONREGULATED  
SEPARATED AT POINT OF ORIGIN  
DESTINED FOR RECYCLING / REUSE

HAZARD CLASS: Non-hazardousVEHICLE TYPE: Dump TruckVOLUME / UNITS: Est. 22 tons**BILL OF LADING****LOAD DATE AND TIME:**12/28/99 9:30A**RECEIVING DATE AND TIME:****DELIVER TO:**

CLEAN ROCK INDUSTRIES  
1469 OAK RIDGE PLACE  
HAGERSTOWN, MD 21740

**WEIGHTS:**

GROSS: \_\_\_\_\_

TARE: \_\_\_\_\_

NET: \_\_\_\_\_

TONS: \_\_\_\_\_

I HEREBY CERTIFY THAT THE ABOVE NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE \_\_\_\_\_

AR306243



No 31751

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # \_\_\_\_\_

Load # 8

## SITE ENTRY TICKET

## CARRIER NAME &amp; ADDRESS:

HOBBS TRUCKING  
FAIRFIELD, PA

PHONE: 717-334-6586

TRUCK #: 246TAG #: 7-2-91

TRAILER #:

TAG #:

DRIVER'S NAME:

## GENERATOR:

Crater Resources PRP Group  
Flint Hill Road  
Swedeland, PA 19103

PHONE: 609-895-0050

## BROKER NAME &amp; ADDRESS:

American Waste Management Services, Inc.  
One American Way  
Warren, OH 44484

PHONE: 330-356-8800

I HEREBY CERTIFY THAT THE BELOW NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE

## BROKER REPRESENTATIVE:

PRINT NAME: Raimund A. Sundermann

SIGNATURE

## DESCRIPTION OF COMMODITIES:

Non-hazardous Contaminated Soil

RCRA NONHAZARDOUS / DOT NONREGULATED  
SEPARATED AT POINT OF ORIGIN  
DESTINED FOR RECYCLING / REUSE

HAZARD CLASS: Non-hazardousVEHICLE TYPE: Dump TruckVOLUME / UNITS: Est. 22 tons

## BILL OF LADING

## LOAD DATE AND TIME:

12/28/99 9:40 A

## RECEIVING DATE AND TIME:

## DELIVER TO:

CLEAN ROCK INDUSTRIES  
1469 OAK RIDGE PLACE  
HAGERSTOWN, MD 21740

## WEIGHTS:

GROSS: \_\_\_\_\_

TARE: \_\_\_\_\_

NET: \_\_\_\_\_

TONS: \_\_\_\_\_

I HEREBY CERTIFY THAT THE ABOVE NAMED  
COMMODITY WAS LOADED ON THE CARRIER AND  
TRUCK IDENTIFIED ABOVE.

SIGNATURE

AR306244

# Clean Rock

No 31752

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-AWLoad # 9

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>HOBBBS TRUCKING</u> <u>FAIRFIELD, PA</u>  <b>PHONE:</b> <u>717-334-6586</u>	<b>TRUCK #:</b> <u>100</u> <b>TAG #:</b> <u>100</u>
	<b>TRAILER #:</b> <u>100</u> <b>TAG #:</b> <u>100</u>
	<b>DRIVER'S NAME:</b> <u>W. S. V.</u>
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u>  <b>PHONE:</b> <u>609-895-0050</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u>  <b>PHONE:</b> <u>330-856-8800</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> <u>[Signature]</u>	<b>BROKER REPRESENTATIVE:</b>  <b>PRINT NAME:</b> <u>Raimund A. Gundersmann</u>  <b>SIGNATURE</b> <u>[Signature]</u>

<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <u>RCRA NONHAZARDOUS / DOT NONREGULATED</u> <u>SEPARATED AT POINT OF ORIGIN</u> <u>DESTINED FOR RECYCLING / REUSE</u>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>Est. 22 tons</u>
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<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> <u>12/28/99</u> <u>10:00A</u>	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> <u>CLEANROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>  <b>GROSS:</b> _____  <b>TARE:</b> _____  <b>NET:</b> _____  <b>TONS:</b> _____
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> _____	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306245

# Clean Rock

No 31753

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99473-1WLoad # 14

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>HOBS TRUCKING</u> <u>FARFELD, PA</u>  <b>PHONE:</b>	<b>TRUCK #:</b> _____ <b>TAG #:</b> _____
	<b>TRAILER #:</b> _____ <b>TAG #:</b> _____
	<b>DRIVER'S NAME:</b> _____
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u>  <b>PHONE:</b> <u>609-895-0050</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44434</u>  <b>PHONE:</b> <u>330-856-8800</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> <u>[Signature]</u>	<b>BROKER REPRESENTATIVE:</b>  <b>PRINT NAME:</b> <u>Raimund A. Sundermann</u>  <b>SIGNATURE</b> <u>[Signature]</u>

<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <b>RCRA NONHAZARDOUS / DOT NONREGULATED</b> <b>SEPARATED AT POINT OF ORIGIN</b> <b>DESTINED FOR RECYCLING / REUSE</b>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>NO LOAD</u> <u>Es: [unclear]</u>
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<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> <u>12/28/99</u>	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>  <b>GROSS:</b> _____  <b>TARE:</b> _____  <b>NET:</b> _____  <b>TONS:</b> _____
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b>	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306246

# Clean Rock

No 31754

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 95403 JWLoad # 10

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>HOBBS TRUCKING</u> <u>FRANKFORD, PA</u>  <b>PHONE:</b>	<b>TRUCK #:</b> _____ <b>TAG #:</b> _____
	<b>TRAILER #:</b> _____ <b>TAG #:</b> _____
	<b>DRIVER'S NAME:</b> _____
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Elm Hill Road</u> <u>Swedeland, PA 19103</u>  <b>PHONE:</b> <u>609-895-0050</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u>  <b>PHONE:</b> <u>330-856-8800</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> <u>[Signature]</u>	<b>BROKER REPRESENTATIVE:</b>  <b>PRINT NAME:</b> <u>Raimund A. Gundermann</u>  <b>SIGNATURE</b> _____
<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <u>RCRA NONHAZARDOUS / DOT NONREGULATED</u> <u>SEPARATED AT POINT OF ORIGIN</u> <u>DESTINED FOR RECYCLING / REUSE</u>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>NO LOAD</u> <u>Estimate 60RS</u> <u>[Signature]</u>
<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> _____	<b>RECEIVING DATE AND TIME:</b> _____
<b>DELIVER TO:</b> <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>  <b>GROSS:</b> _____  <b>TARE:</b> _____  <b>NET:</b> _____  <b>TONS:</b> _____
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> _____	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306247



No 31755

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-17Load # 11

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>HOBBY TRUCKING</u> <u>FARFIELD, PA</u>	<b>TRUCK #:</b> <u>1588</u> <b>TAG #:</b> <u>PHC 3229</u>
	<b>TRAILER #:</b> <u>11A</u> <b>TAG #:</b> <u>TN 831003</u>
	<b>DRIVER'S NAME:</b> <u>174 Hilly Boone</u>
<b>PHONE:</b>	
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u>
<b>PHONE:</b> <u>609-895-0050</u>	<b>PHONE:</b> <u>330-856-8800</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>	<b>BROKER REPRESENTATIVE:</b>
<b>SIGNATURE:</b> <u>[Signature]</u>	<b>PRINT NAME:</b> <u>Raimund A. Gundermann</u>
	<b>SIGNATURE:</b>

<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <u>RCRA NONHAZARDOUS / DOT NONREGULATED</u> <u>SEPARATED AT POINT OF ORIGIN</u> <u>DESTINED FOR RECYCLING / REUSE</u>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>NO LOAD</u> <u>Estimated 22 tons</u> <u>[Signature]</u>
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<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b>	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>	<b>GROSS:</b> _____
	<b>TARE:</b> _____
	<b>NET:</b> _____
	<b>TONS:</b> _____
<b>SIGNATURE</b>	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306248



No 31756

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423-ANLoad # 12

SITE ENTRY TICKET	
CARRIER NAME & ADDRESS: <u>HOBBS TRUCKING</u> <u>FAIRFIELD, PA</u> PHONE: _____	TRUCK #: <u>245</u> TAG #: <u>0392030</u>
	TRAILER #: _____ TAG #: _____
	DRIVER'S NAME: <u>Robert M. Hildner</u>
GENERATOR: <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u> PHONE: <u>609-895-0050</u>	BROKER NAME & ADDRESS: <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u> PHONE: <u>330-856-8800</u>
I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE. SIGNATURE: <u>[Signature]</u>	BROKER REPRESENTATIVE: PRINT NAME: <u>Raimund K. Sundermann</u> SIGNATURE: <u>[Signature]</u>

DESCRIPTION OF COMMODITIES: <u>Non-hazardous Contaminated Soil</u> RCRA NONHAZARDOUS / DOT NONREGULATED SEPARATED AT POINT OF ORIGIN DESTINED FOR RECYCLING / REUSE	HAZARD CLASS: <u>Non-hazardous</u> VEHICLE TYPE: <u>Dump Truck</u> VOLUME / UNITS: <u>NO LOAD</u> <u>Est. 20 tons</u> <u>(43)</u>
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BILL OF LADING	
LOAD DATE AND TIME: <u>12/28/99</u>	RECEIVING DATE AND TIME:
DELIVER TO: <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	WEIGHTS: GROSS: _____ TARE: _____ NET: _____ TONS: _____
I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE. SIGNATURE _____	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306249



No 31757

1469 Oak Ridge Place  
Hagerstown, MD 21740-7485  
Ph. 301-791-6220

APPROVAL # 99423 AULoad # 13

<b>SITE ENTRY TICKET</b>	
<b>CARRIER NAME &amp; ADDRESS:</b> <u>HOBBS TRUCKING</u> <u>FAIRFIELD, PA</u>  <b>PHONE:</b>	<b>TRUCK #:</b> <u>250</u> <b>TAG #:</b> <u>07-1-15</u>
	<b>TRAILER #:</b> <u></u> <b>TAG #:</b> <u></u>
	<b>DRIVER'S NAME:</b> <u>Paul Cook</u>
<b>GENERATOR:</b> <u>Crater Resources PRP Group</u> <u>Flint Hill Road</u> <u>Swedeland, PA 19103</u>  <b>PHONE:</b> <u>609-895-0050</u>	<b>BROKER NAME &amp; ADDRESS:</b> <u>American Waste Management Services, Inc.</u> <u>One American Way</u> <u>Warren, OH 44484</u>  <b>PHONE:</b> <u>330-856-8300</u>
<b>I HEREBY CERTIFY THAT THE BELOW NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b> <u>[Signature]</u>	<b>BROKER REPRESENTATIVE:</b>  <b>PRINT NAME:</b> <u>Raimund A. Gundermann</u>  <b>SIGNATURE</b> <u>[Signature]</u>
<b>DESCRIPTION OF COMMODITIES:</b> <u>Non-hazardous Contaminated Soil</u>  <u>RCRA NONHAZARDOUS / DOT NONREGULATED</u> <u>SEPARATED AT POINT OF ORIGIN</u> <u>DESTINED FOR RECYCLING / REUSE</u>	<b>HAZARD CLASS:</b> <u>Non-hazardous</u>  <b>VEHICLE TYPE:</b> <u>Dump Truck</u>  <b>VOLUME / UNITS:</b> <u>NO LOAD</u> <u>Est. 20 tons</u> <u>[Signature]</u>
<b>BILL OF LADING</b>	
<b>LOAD DATE AND TIME:</b> <u>12/28/95</u>	<b>RECEIVING DATE AND TIME:</b>
<b>DELIVER TO:</b> <u>CLEAN ROCK INDUSTRIES</u> <u>1469 OAK RIDGE PLACE</u> <u>HAGERSTOWN, MD 21740</u>	<b>WEIGHTS:</b>  <b>GROSS:</b> _____  <b>TARE:</b> _____  <b>NET:</b> _____  <b>TONS:</b> _____
<b>I HEREBY CERTIFY THAT THE ABOVE NAMED COMMODITY WAS LOADED ON THE CARRIER AND TRUCK IDENTIFIED ABOVE.</b>  <b>SIGNATURE</b>	

White - Billing; Green - Broker; Canary - Facility; Pink - Truck; Goldenrod - Generator

AR306250

*Appendix B*  
*Field Representative Daily*  
*Reports*

AR306251

# KEYSTONE COKE COMPANY SUSPECTED FORMER PIPELINE EXCAVATION, UPPER MERION

## Field Representative Daily Report

Date: 21 December 1999 W.O.#: H4904.00.01 Representative: Christophe Collet  
Client: Ballard, Spahr, Andrews & Ingersoll  
Project: Pipeline Excavation

### Time Record

Time activities started: 0730

Time activities finished: 1700

### Project Time

Report Number:

### Key Persons and Visitors On-Site

Individual	Firm	Hours on Site
Christophe P Collet	ERM, Inc	9.5
Kevin Halloran	EME, Inc	8.5
Ken Kelly	EnviroClean	8.5
Rob Heck	EnviroClean	8.5

### Weather

Temperature (°F): 40-45

Humidity: NA

Precipitation: none

Clear/Overcast: Overcast

Windchill NA

### Equipment Excavator and Loader for

Pipeline excavation: Hand tools used for soil sample collection.

**Progress Performance:** Excavation started at the 750-foot marker and progressed north towards River Road. At approximately 13:15 equipment was mobilized and pipeline excavation continued at 900-foot marker toward the south to the 980-foot marker. The excavated pipe is 4-inch steel pipe and appeared to be moderately corroded. Surface soil was excavated and put aside for use as backfill. Pipe and soil adjacent and below pipe was excavated and stockpiled. Soil did not appear to be significantly impacted, no odor or staining was observed in soil. In some areas along the pipeline, the pipe could not be located. In these areas, excavation was advanced to native soil with no indication of soil staining or odor. In areas where pipe could not be located and no staining or odor were observed, excavated soil was used as backfill.

Area of pipeline excavation is illustrated on the attached Figure 1. Areas where the pipe and soil were excavated included sections between distance markers 940 to 900, 750 to 600, 525 to 500, 350 to 300, 280 to 150, and 50 to 0. The area from markers 600 to 525 consisted of an area where the hillside including the former pipeline had been previously removed. A section of 4-inch steel pipe was discovered among other debris on the ground beside the former pipeline in the vicinity of the 280-foot marker. This pipe was stockpiled. Excavation of the pipeline from markers 750 to 900 was conducted on 20 December, 1999. It should be noted that two pipes were excavated and stockpiled at the 0-foot marker. The second pipe is believed to have been a section of the former above-ground pipeline that was routed underground in order to cross River Road. No excavation was possible to the north of the 0-foot marker due to the proximity to River Road.

Sample collection commenced at approximately 14:35. Samples were collected using stainless steel spoons and En-Core samplers. Samples were collected from the interval of 0- to 6-inches from the surface of the excavation. Soil samples were collected at markers 0, 150, 300, 450, 525, 600, 750, and 900. Matrix spike and matrix spike duplicate were collected at location 150. A blind duplicate, labelled XX-Dup was collected at location 900.

Chris Collet leaves site to drop off samples at Fed-Ex at approximately 17:00.

# KEYSTONE COKE COMPANY SUSPECTED FORMER PIPELINE EXCAVATION, UPPER MERION Field Representative Daily Report

Date: 22 December 1999      W.O.#: H4904.00.01      Representative: Ron Lobb  
 Client: Ballard, Spahr, Andrews & Ingersoll  
 Project: Pipeline Excavation

## Time Record

Time activities started: 0730  
 Time activities finished: 1545

## Project Time

Report Number:

## Key Persons and Visitors On-Site

Individual	Firm	Hours on Site
Ron Lobb	ERM, Inc	8.25
Kevin Halloran	EME, Inc	8.25
Ken Kelly	EnviroClean	8.25
Rob Heck	EnviroClean	8.25
Stue Bills	EnviroClean	

## Weather

Temperature (°F):

Humidity:

Precipitation:

Clear/Overcast:

Windchill

## Equipment Excavator and Loader for

Pipeline excavation:

**Progress Performance:** Excavation starts at approximately 08:00 at the 980-foot marker and progresses south towards Flint Hill Road to the 1,020-foot marker. At approximately 08:30 excavation equipment is mobilized to marker 1,875 and excavation work is continued northward toward the 1,020-foot marker. At approximately 14:30, excavator is mobilized to Flint Hill road to clear trees and brush in order to excavate further south. It should be noted that work was halted for approximately 25-minutes in order to free the loader which had become stuck in the mud at approximately 09:20. Excavation followed the same procedure as on 21 December, 1999.

Area of pipeline excavation is illustrated on the attached Figure 1. Areas where the pipe and soil were excavated included areas from distance markers 980 to 1,350, and from 1650 to 1875. It was noted that the pipe excavated at the 1,350 marker ended in a flange joint. No soil samples were collected on this day.

**KEYSTONE COKE COMPANY SUSPECTED FORMER PIPELINE EXCAVATION, UPPER MERION** **Field Representative Daily Report**

Date: 23 December 1999 W.O.#: H4904.00.01 Representative: Christophe Collet  
Client: Ballard, Spahr, Andrews & Ingersoll  
Project: Pipeline Excavation

**Time Record**

Time activities started: 0800  
Time activities finished: 1200

**Project Time**

Report Number:

**Key Persons and Visitors On-Site**

Individual	Firm	Hours on Site
Christophe Collet	ERM, Inc	4
Kevin Halloran	EME, Inc	4
Ken Kelly	EnviroClean	4
Rob Heck	EnviroClean	4

**Weather**

Temperature (°F): 30 - 40

Humidity:

Precipitation: None

Clear/Overcast: Overcast

Windchill

**Equipment** Excavator and Loader for

Pipeline excavation: Hand tools used for  
soil sampling.

**Progress Performance:** Excavation starts at approximately 09:45 at the 1,875-foot marker and progresses south towards Flint Hill Road to the 2,050-foot marker. The same excavation and soil removal procedure was followed today as on 21 December, 1999. 4 inch steel pipe was removed for the entire section excavated. A small amount of black residue was released from the pipe during excavation at the 1,875 marker. Black residue and soil was excavated and stockpiled. Pipe removed at the 2,050 marker was observed to have a threaded flange at the end. Due to the presence of the flange and the difficulty in extracting the pipe it is believed that the pipeline continues under Flint Hill Road. However, due to proximity of the road, further excavation was prohibited.

Sampling equipment was deconned at approximately 08:00. Soil samples were collected starting at 09:00 using clean stainless steel spoons. Sampling procedures followed those used on 21 December, 1999. Soil samples were collected from distance markers 1,050, 1,200, 1,350, 1,500, 1,650, 1,800, 1,875, and 2,050. Chris Collet Leaves site at 12:00 to drop off samples at Federal Express.

AR306254

# **KEYSTONE COKE COMPANY SUSPECTED FORMER PIPELINE EXCAVATION, UPPER MERION**

## **Field Representative Daily Report**

Date: 27 December 1999 W.O.#: H4904.00.01 Representative: Christophe Collet

Client: Ballard, Spahr, Andrews & Ingersoll

Project: Pipeline Excavation

### **Time Record**

Time activities started: 1300

Time activities finished: 1600

### **Key Persons and Visitors On-Site**

### **Project Time**

Report Number:

### **Weather**

Temperature (°F): 30 - 40

Humidity:

Precipitation: None

Clear/Overcast: Overcast

Windchill

Equipment: Hand tools used for soil sampling.

Individual	Firm	Hours on Site
Christophe Collet	ERM, Inc	3

**Progress Performance:** Chris Collet leaves office to pick up bottle order at Fed-Ex at approximately 11:45. Arrive on-site and decon equipment at approximately 13:00. Field activities for the day consisted of collection of surface soil samples from the pipeline excavation. Soil samples collected from a depth of 6-inches to 1-foot below ground surface. Samples were collected using clean stainless steel hand tools. Soil samples were collected from the 300, 600, 900, 1,200, 1,500, and 1,800 foot distance markers. Chris Collet leaves site to drop off sample shipment at Federal Express at approximately 16:00.

*Appendix C*  
*Analytical Data Package:*  
*Confirmatory Sampling –*  
*Organics*  
*(Not Included with This Copy of the Report)*

AR306256

*Appendix D*  
*Analytical Data Package:*  
*Confirmatory Sampling –*  
*Inorganics*  
*(Not Included with This Copy of the Report)*

AR306257

*Appendix E*  
*Analytical Data Package:*  
*Surface Soil Sampling -*  
*Organics*  
*(Not Included with This Copy of the Report)*

AR306258

*Appendix F*  
*Analytical Data Package:*  
*Surface Soil Sampling --*  
*Inorganics*  
*(Not Included with This Copy of the Report)*

AR306259



Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010  
555 North Lane  
Conshohocken, PA 19428  
July 17, 2000

Southeast Regional Office

610-832-5949  
Fax 610-832-6143

Samantha R. Corson, Esquire  
Ballard Spahr Andrews & Ingersoll, LLP  
1735 Market Street, 51<sup>st</sup> Floor  
Philadelphia PA 19103-7599

Re: Act 2 – Approval of Report  
ID No. 1-46-955-28077  
Keystone Coke Company  
Suspected Former Pipeline Corridor  
River Road and Flint Hill Road  
Swedeland, Upper Merion Township  
Montgomery County

Dear Ms. Corson:

Please be advised that the Final Report titled "Act 2 Statewide Health Standard, Final Report, Keystone Coke Company Suspected Former Pipeline Corridor, Upper Merion Township, Montgomery County, Pennsylvania" pertaining to the subject site has been approved by the Department of Environmental Protection, in accordance with the provisions of the Land Recycling and Environmental Remediation Standards Act (Act 2). The liability protections for attainment of the selected cleanup standard are set forth in Chapter 5 of Act 2.

The Final Report contains a demonstration of attainment of an Act 2 standard for soil. The facility has attained a Used Aquifer, Non-Residential Statewide Health standard for the following compounds in soil at the excavation area between Flint Hill Road and River Road, west of B Street:

aluminum, antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, cyanide, iron, lead, manganese, mercury, nickel, selenium, vanadium, zinc; acetone, benzene, 2-butanone, carbon disulfide, dichloromethane, ethyl benzene, toluene, 1,1,2-trichloroethane, total xylenes; acenaphthene, acenaphylene, acetophenone, anthracene, benzo(a) anthracene, benzo(a)pyrene benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, butylbenzylphthalate, carbazole, 4-chloro-3-methylphenol, chrysene, *o*-cresol (2-methylphenol), *p*-cresol (4-methylphenol), dibenzo(a,h)anthracene, di-*n*-butylphthalate, fluoranthene, fluorine, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, phenol, pyrene.

July 17, 2000

Thank you for your cooperation in working with the Department in the remediation of this site. If you need any additional information regarding this matter, please contact us.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bruce D. Beitler". The signature is fluid and cursive, with the first and last names being more prominent.

Bruce D. Beitler  
Regional Manager  
Environmental Cleanup

cc: Ms. Pantelidou  
Ms. Tremont  
Mr. Day-Lewis  
Ms. Fries  
Mr. Hess  
Montgomery County Health Department  
Upper Merion Township  
Regional File  
(SLP)

AR306261

Environmental  
Resources  
Management

Princeton Crossroads  
250 Phillips Blvd.  
Suite 280  
Ewing, NJ 08618  
(609) 895-0050  
(609) 895-0111 (fax)  
<http://www.erm.com>

27 April 2000  
Reference: H4904.00.01

Ms. Andrea Lord  
U.S. Environmental Protection Agency  
Region III, 3HS21  
1650 Arch Street  
Philadelphia, Pennsylvania 19103



**Re: PADEP Act 2 Statewide Standard Final Report**  
*Keystone Coke Company Suspected Former Pipeline Corridor*  
*Upper Merion Township, Montgomery County, Pennsylvania*

Dear Ms. Lord:

Enclosed you will find one copy of a report entitled *Act 2 Statewide Standard Final Report, Keystone Coke Company Suspected Former Pipeline Corridor, Upper Merion Township, Montgomery County, Pennsylvania* that is being submitted on behalf of the Drummond Company, Vesper Corporation and Beazer East Inc. to the Pennsylvania Department of Environmental Protection's Environmental Cleanup Program under Act 2.

If you have any questions or comments pertaining to this document, please direct them to Robert McKinstry, Jr. (215-864-8208) or Samantha Corson (215-864-8127) at Ballard Spahr Andrews & Ingersoll.

Sincerely,

Randy E. Shuler, Ph.D., D.A.B.T.  
Project Manager/Senior Scientist II

RLS/ms

enclosure: 1

cc: R. McKinstry (Ballard Spahr Andrews & Ingersoll)  
C. Jones (Drummond Company)  
J. Curci (Vesper Corporation)  
B. Giarla (Beazer East Inc.)  
J. Cook (Beazer East Inc.)  
D. Schleicher (Klehr Harrison Harvey Branzburg & Ellers)  
G. Gonsoulin (Environmental Management Engineering)

AR306262



AR306263

## **SUMMARY OF FLINT HILL ROAD SOIL REMEDIATION ACTIVITIES**

### **1.0**

#### **BACKGROUND**

A section of underground pipe was discovered near the intersection of Flint Hill Road and Viking Road in Upper Merion Township, Pennsylvania, approximately one mile from the Crater Resources Site. The pipe was discovered on 14 May 1997 by a road construction company working for Upper Merion Township (UMT). The construction company was excavating soil from beneath Flint Hill Road to install a concrete stormwater culvert beneath the roadway. The unearthed pipe was observed by representatives of the USEPA who were in the vicinity at that time.

Upon discovery of the pipe, ERM was contacted by the USEPA, as this section of pipe was thought to represent a portion of the former WAL pipeline that formerly extended to the Crater Resources site. ERM collected several soil samples adjacent to, beneath, and from inside the pipe. These samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs), TCL Semivolatile Organic Compounds (SVOCs), cyanide and Total Petroleum Hydrocarbons (TPH). The results of these samples are summarized in Table A-1.

The soil samples contained elevated concentrations of polynuclear aromatic hydrocarbons (PAHs) and phenols. Metals and TPH concentrations did not appear to be significantly elevated. In addition, only very low concentrations of VOCs were detected within the pipe itself (sample 5/15-4), but not in the surrounding soil.

Because of the elevated concentrations of PAH and phenols in the soil surrounding the pipe, and because the pipe presented an obstruction to the construction company at the site, the USEPA requested that the pipe be removed along with any visually-impacted soil. The Crater Resources PRP Group voluntarily agreed to address the pipe and soil remediation. ERM prepared a Work Plan, dated 21 May 1997, that outlined the scope of work for the pipe and soil removal and the collection of post-excavation samples. This Work Plan was conditionally approved by the USEPA on 23 May 1997. A copy of the work plan and approval letter are provided in Attachment A-1. Excavation of the pipe and associated soils began on 23 May 1997, and was conducted over three mobilizations from May to July 1997. The excavation and sampling methods used during the remediation are described in the following sections.

- Target Compound List Volatile Organic Compounds (TCL VOCs),
- TCL Semivolatile Organic Compounds (TCL SVOCs),
- Target Analyte List (TAL) metals, and
- cyanide.

Following receipt of the analytical results, they were evaluated by ERM and the USEPA to determine whether additional soil needed to be excavated.

### 2.3 **WASTE DOCUMENTATION**

All documentation and related transportation paperwork was generated for each dumpster prior to shipment. All major aspects of the soil excavation activities were observed and documented by an ERM representative. Documentation of soil excavation activities was maintained in the following forms:

- field notebook,
- photographs, and
- waste manifests.

Copies of the waste manifests are provided in Attachment A-2.

### 2.4 **SOIL DISPOSAL**

Following soil characterization, the excavated soil was characterized for disposal purposes, then transported to Clean Earth of New Castle, Inc. in New Castle, Delaware for treatment. Copies of the Certificates of Destruction from Clean Earth are provided in Attachment A-2.

### 2.5 **HEALTH AND SAFETY MONITORING**

During soil excavation and loading, health and safety monitoring was performed by ERM using a flame ionization detector (FID). All activities were performed in accordance with the Crater Resources Health and Safety Plan.

However, metals did not appear to be elevated. The parameter concentrations in these samples were below the 21 April 1997 Act 2 soil standards, except for benzo(a)pyrene, naphthalene, pyrene and cyanide. However, the samples collected beneath the pipe at that location, (samples 5/16, 18"-24", and 5/16, 30"-36") indicated the PAH concentrations decreased significantly.

The material inside the pipe (sample 5/15-4) indicated significantly elevated concentrations of several PAHs and various phenols. Several of the PAHs were above the 21 April 1997 Act 2 soil standards. However, only low, estimated concentrations of benzene, carbon disulfide, methylene chloride and styrene were present inside the pipe. Additionally, metals were not significantly elevated.

Following the commencement of remediation, additional soil samples were collected of the heavily-stained material that was present beneath the pipe (samples 5/28-2 and 6/12-2). At the request of the USEPA, this stained material was also excavated for disposal, although, the constituent concentrations of this material were below the 21 April 1997 Act 2 soil standards, except for benzo(a)pyrene and naphthalene. These analytical results are also summarized in Table A-1.

### 3.1.2 *Post-Excavation Samples*

As mentioned previously, visually-stained soil beneath the entire length of the pipe was excavated and loaded into dumpsters. Soil was excavated to depths ranging from 6 to 9 feet below grade, along the entire width of Flint Hill Road. Approximately 138 tons of soil (approximately 92 cubic yards) was removed from around the pipe and sent off site for disposal. Figure A-2 depicts the relative extent of the excavated area.

Following completion of the excavation, post-excavation soil samples were collected from the walls and floor of the excavation. Four floor samples and seven wall samples were collected to confirm that the remaining soil constituent concentrations were below the 21 April 1997 Act 2 soil standards that were proposed at the time of remediation. The results of the post-excavation samples are summarized in Table A-2, with their locations depicted on Figure A-2.

Although several PAHs and phenols were detected in the post-excavation samples, all concentrations were below the 21 April 1997 Act 2 soil standards, as required in the Work Plan. The VOCs (detected in only a few of the samples) metals, and cyanide concentrations in the samples were also below the Act 2 standards.

The objective of the pipe and soil excavation was to remove a section of pipe that was present beneath the road surface of Flint Hill Road, and associated visually-stained soils that contained PAH and phenolic concentrations above the 21 April 1997 Act 2 soil standards. A total of approximately 138 tons of soil (approximately 92 cubic yards) containing PAHs and phenolic compounds were removed from beneath Flint Hill Road. Thus, soil removal was completed to the cleanup levels outlined in the Work Plan. The post-excavation sampling results have verified that cleanup goals were achieved. The pipe and all excavated soil was treated at a permitted facility.

**Tab. A-1**  
**Analytical Results of Excavated Soil**  
**Flint Hill Road Site**  
**Swedeland, Pennsylvania**

*Note: These analytical results represent soil that was excavated and sent off site for disposal.*

Analytical Parameter	Sample ID Sample Depth (ft) Sample Location	Pennsylvania Act 2 Non-Res. Subsurface Soil Standard (2-15 feet)	Pennsylvania Act 2 Non-Res. Soil to GW Standard (TDS <2500)	Sample Location							
				5/15-1 4 beside pipe 05/15/97 029122	5/15-3 4 beside pipe 05/15/97 029124	5/15-4 4 8 ft from pipe 05/15/97 029125	5/16-18"-24" 1.5-2 below pipe 05/16/97 029126	5/16-30"-36" 2.5-3 below pipe 05/16/97 029127	5/28-2** 7 wall 05/28/97 NA	6/12-2 5 wall 06/12/97 030058	
Volatiles Organic Compounds (µg/kg)											
Acetone		10,000,000	1,000,000	U	U	U	U	U	U	U	U
Benzene		230,000	500	U	U	2J	U	U	U	U	6J
Carbon Disulfide		10,000,000	410,000	U	U	2J	U	U	U	U	U
Ethylbenzene		10,000,000	70,000	U	U	U	U	U	U	U	11
Methylene Chloride		4,000,000	500	2J	2J	6J	2J	U	U	U	U
Styrene		10,000,000	24,000	U	U	3J	U	U	U	U	16
Toluene		10,000,000	100,000	U	U	U	U	U	U	U	13
Xylene (total)		10,000,000	1,000,000	U	U	U	U	U	U	U	100
Total Petroleum Hydrocarbons (mg/kg)		NA	NA	547	116	544	157	60.8	NA	NA	NA
Semi-volatile Organic Compounds (µg/kg)											
2-Methylnaphthalene		10,000,000	10,000,000	6,400	560	450,000	66J	69J	U	U	25,000
2-Methylphenol		1,100,000	10,000	U	U	250J	U	U	U	U	U
4-Methylphenol		190,000,000	100,000	U	U	770J	U	U	U	U	500J
Acenaphthene		190,000,000	4,300,000	4,900	280J	65,000	56J	65J	290J	290J	3,900
Acenaphthylene		190,000,000	4,400,000	54,000	4,400	1,100,000	1,000	1,200	1,700	1,700	50,000
Anthracene		190,000,000	230,000	59,000	9,500	2,200,000	680	930	400J	400J	40,000
Benzo(a)anthracene		190,000,000	320,000	91,000	10,000	980,000	2,000	2,300	480J	480J	46,000
Benzo(a)pyrene		190,000,000	46,000	120,000	11,000	1,100,000	2,700	3,200	310J	310J	50,000
Benzo(b)fluoranthene		190,000,000	160,000	92,000	8,900	920,000	2,000	2,800	330J	330J	43,000
Benzo(g,h,i)perylene		190,000,000	180,000	58,000	7,900	750,000	1,900	2,000	200J	200J	34,000
Benzo(k)fluoranthene		190,000,000	600,000	110,000	8,700	780,000	2,200	2,200	160J	160J	39,000
bis(2-Ethylhexyl)phthalate		10,000,000	130,000	1,100	U	U	43J	U	U	U	1,100J
Carbazole		NA	NA	16,000	2,100	460,000	98J	110J	U	U	20,000
Chrysene		190,000,000	220,000	110,000	12,000	1,000,000	2,100	2,700	300J	300J	46,000
Dibenz(a,h)anthracene		190,000,000	160,000	16,000	1,800	100,000	470	490	U	U	11,000
Dibenzofuran		NA	NA	37,000	2,100	620,000	260J	220J	U	U	28,000
Fluoranthene		190,000,000	3,300,000	240,000	21,000	3,000,000	4,100	4,400	2,300	2,300	150,000
Fluorene		190,000,000	380,000	64,000	4,600	1,000,000	400	440	2,000	2,000	38,000
Indeno(1,2,3-cd)pyrene		190,000,000	28,000,000	63,000	8,100	810,000	2,000	2,200	220J	220J	39,000
Naphthalene		19,000,000	5,000	39,000	9,000	830,000	160J	150J	1,100	1,100	200,000
Phenanthrene		190,000,000	11,000,000	240,000	16,000	3,600,000	2,300	2,700	1,200	1,200	150,000
Phenol		190,000,000	400,000	U	U	600J	U	U	U	U	410J
Pyrene		190,000,000	220,000	240,000	22,000	2,800,000	3,500	4,800	710	710	110,000

\*For cyanide standard

\*\* Sample analyzed by ERM-FAST

U: Not detected

NA: Not analyzed

J: Quantitative

B: Result qualitatively invalid due to blank contamination.

AR306268

Table A-2  
Post-Excavation Sample Results  
Flint Hill Road Site  
Swedeland, Pennsylvania

Analytical Parameter	Sample Date TR No.	Sample ID Sample Depth (ft) Sample Location	21 April 1997 Pennsylvania Act 2 Non-Res. Subsurface Soil Standard (2-15 feet)	21 April 1997 Pennsylvania Act 2 Non-Res. Soil to GW Standard (TDS >2500)	5/27-1 6 wall	5/27-2 6 wall	5/28-1 7 floor	6/12-3 6 floor	6/12-4 6 floor	6/12-5 5 wall	6/13-1 8 floor	CR-1B 8 floor	CR-1EW 6 wall	CR-1SW 6 wall	CR-1NW 6 wall
Volatile Organic Compounds (µg/kg)															
Acetone		10,000,000	1,000,000		48	50	15	U	U	U	U	U	U	U	U
Benzene		230,000	500		U	U	U	31	U	U	U	U	U	U	U
Carbon Disulfide		10,000,000	410,000		21	U	U	U	U	U	U	U	U	U	U
Ethylbenzene		10,000,000	70,000		U	U	U	41	U	U	U	U	U	U	U
Methylene Chloride		4,000,000	500		29	U	U	U	31	U	U	U	U	U	U
Styrene		10,000,000	24,000		U	U	U	21	U	U	U	U	U	U	U
Toluene		10,000,000	100,000		U	U	U	51	21	U	U	U	U	U	U
Xylene (total)		10,000,000	1,000,000		U	U	U	20	U	U	21	U	U	U	U
Total Petroleum Hydrocarbons (mg/kg)		NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/kg)															
2-Methylphenol		10,000,000	10,000,000		1001	U	U	1601	U	U	980	U	U	U	U
4-Methylphenol		1,100,000	10,000		U	U	U	U	U	U	U	U	U	U	U
Acenaphthene		190,000,000	100,000		U	U	U	U	U	U	U	U	U	U	U
Acenaphthylene		190,000,000	4,300,000		1,400	3,400	1,400	621	1601	U	1701	U	830	U	1501
Anthracene		190,000,000	4,400,000		2,800	2101	U	3701	961	U	480	U	U	U	U
Benzo(a)anthracene		190,000,000	230,000		12,000	1,300	U	2801	U	U	2801	U	U	U	U
Benzo(a)pyrene		190,000,000	320,000		10,000	1,200	911	960	U	U	901	U	1,500	U	610
Benzo(b)fluoranthene		190,000,000	46,000		8,100	720	571	1,300	391	U	771	U	2,600	U	600
Benzo(g,h,i)perylene		190,000,000	160,000		6,100	670	471	1,200	U	U	571	390	4,100	520	1,400
Benzo(k)fluoranthene		190,000,000	180,000		3,900	3401	U	1,000	U	U	481	U	3101	U	U
Benzo(l)fluoranthene		190,000,000	600,000		6,800	640	611	1,200	U	U	581	U	U	U	U
benzofluoranthene		10,000,000	130,000		U	U	U	461	U	U	U	U	U	U	U
Carbazole		NA	NA		9,200	U	811	440	2001	U	520	U	1,300	U	1,800
Chrysene		190,000,000	220,000		8,500	1,300	1701	1,100	571	U	621	U	1,400	U	410
Dibenz(a,h)anthracene		190,000,000	160,000		1,400	1101	U	2401	U	U	U	U	U	U	U
Dibenzofuran		NA	NA		5,600	2,100	400	1601	1101	U	560	U	U	U	U
Fluoranthene		190,000,000	3,300,000		24,000	2,300	2801	1,800	1201	U	420	U	2,200	U	1,300
Phenanthrene		190,000,000	380,000		14,000	3,300	460	2201	U	U	770	U	U	U	U
Indeno(1,2,3-cd)pyrene		190,000,000	28,000,000		5,100	430	U	1,200	U	U	411	U	410	U	U
Naphthalene		190,000,000	5,000		4,900	2801	U	2,700	U	U	2,400	U	U	U	1,700
Phenanthrene		190,000,000	11,000,000		10,000	8,300	2001	1,100	U	U	1,900	U	460	U	1,200
Phenol		190,000,000	400,000		U	U	U	U	U	U	U	U	U	U	U
Pyrene		190,000,000	220,000		22,000	2,200	570	1,600	1201	U	3501	U	U	U	720

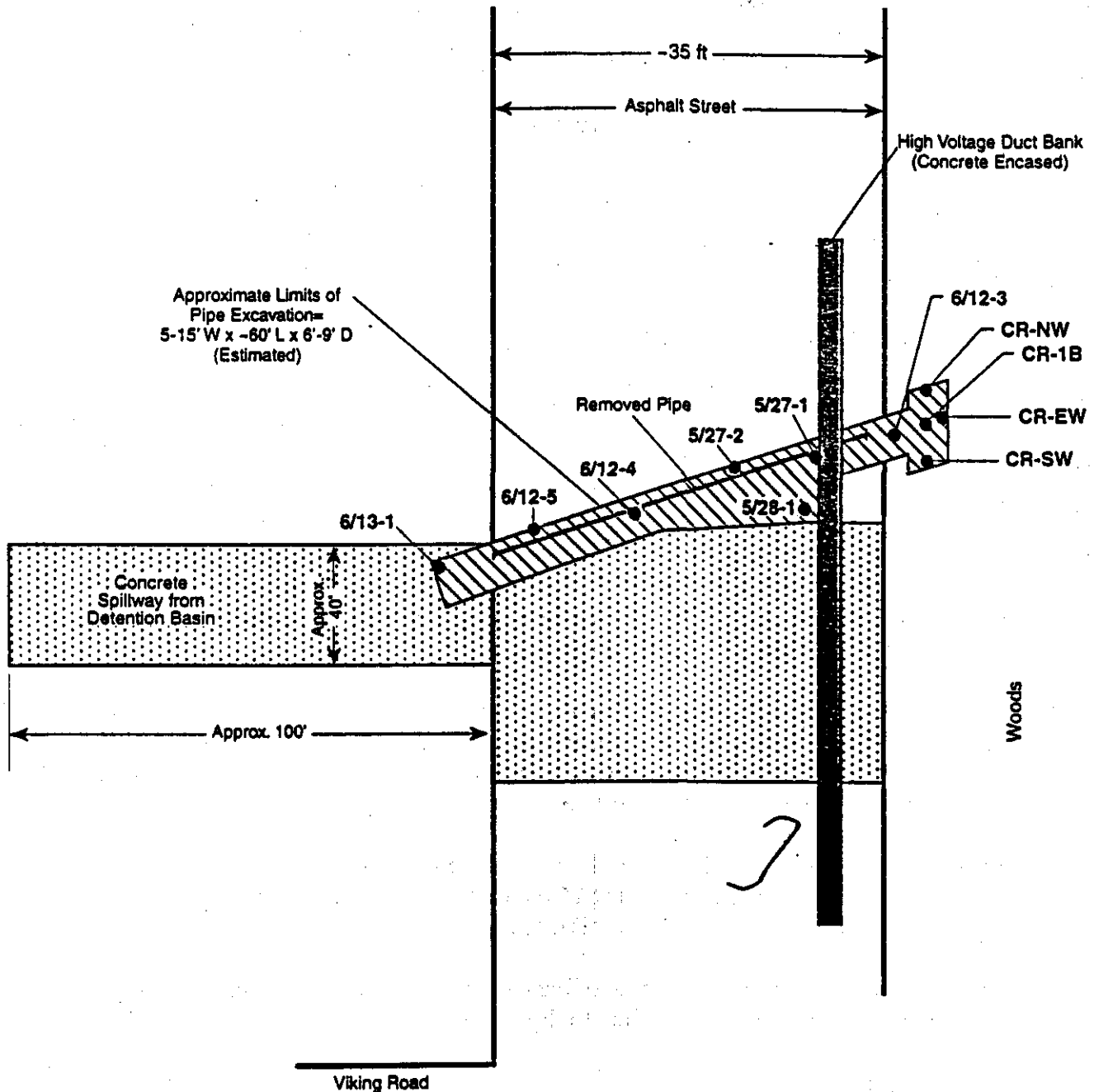
\*Standard listed is for free cyanide  
U: Analyte not detected.  
F: Estimated Concentration  
B: Qualitatively invalid due to blank contamination

AR306269

**Figure A-1**  
**Site Location Map**  
**Upper Merion Township, Pennsylvania**



**Figure A-2**  
**Post-Excavation Sample Locations**  
**Flint Hill Road Site**  
**Upper Merion Township, Pennsylvania**



**Floor Samples**

5/28-1, 7ft depth  
 6/12-3, 6ft depth  
 6/12-4, 6ft depth  
 CR-1B, 8ft depth

**Wall Samples**

5/27-1, 6ft depth  
 5/27-2, 6ft depth  
 6/12-5, 5ft depth  
 6/13-1, 8ft depth  
 CR-NW, 6ft depth  
 CR-SW, 6ft depth  
 CR-EW, 6ft depth

**LEGEND**



Area Excavated by Upper Merion Township

Area Excavated by ERM



Post-excavation Sample Location



Drawing not to scale  
 Distances are estimated